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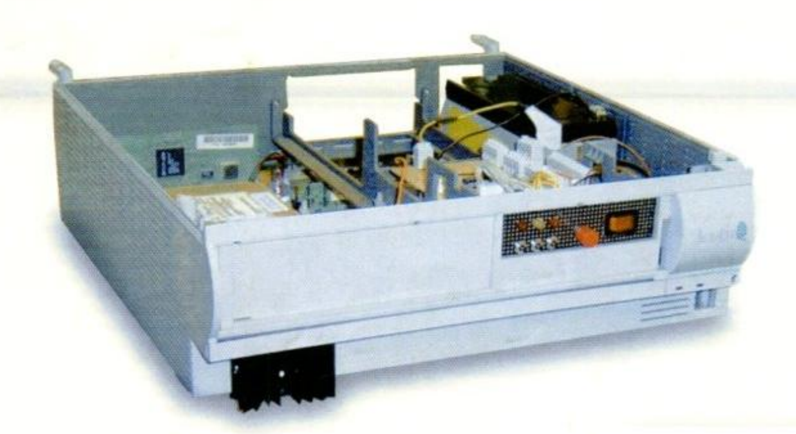
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ISSUE 262 AUGUST 2003 £4.20

August 2003 Issue 262



Next issue on sale: 21th Aug 03

Published by



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Tel: (+44/0) 161 429 8902
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Printed by The Manson Group, St Albans

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Distribution COMAG (01895 444055)
Advertising Steve Turnbull
Managing Director Sharon Henderson

Subscriptions:
(+44/0) 161 429 8902
E-mail: subscrip@acornuser.com
Annual (13 issue) subscription rates:
£46.99 (UK) £51.99 (EU) £63.99 (World)



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Editor's Comments

I bet you weren't expecting that? Okay, I admit it, neither was I. But that big things were afoot was certainly on the cards. The fact that we even had an article that was talking about the branding and positioning of RISC OS was certainly timely.

So what can we look forward to in the future? From the press release that you can read on the news pages of this issue you will be able to see that Jack Lillingston of Castle is not looking to put all his eggs in one basket.

He is going to be working with another company and getting RISC OS-based consumer products into the market place in a big way.

You might liken this to the activity of ARM Ltd. The fact is that there are more, many many more, ARM chips in use in the world than there are Pentium chips of whatever variety. It's just that you don't see them. Just about every mobile phone has an ARM chip and there are a lot of other places they are put.

What we will be hoping to see with RISC OS is the extension of the use of RISC OS (now that it is 32-bit) into a whole multitude of alternate products. The only "problem" with that is that, as with ARM, the user will neither know nor care that the system they are using is running on RISC OS.

However it does matter to the "Trade" what is running, companies that produce mobile phones are aware that they are driven by ARM. This in turn means that they know that they have a reliable chip on their hands that does not absorb a lot of power.

The same will have to become true of RISC OS. It may take quite a bit of work, and we're talking marketing here not programming, to make RISC OS the operating system of choice. But when you consider how many ARM chips there are it becomes reasonable to promote the operating system that is tailor-made for it.

What then happens to the RISC OS desktop market? Well as Jack pointed out at least RISC OS is owned by a company that actually cares about the desktop market now. Obviously Iyonix will be continued and expanded as a product and we will look to having the excellent Select Scheme improvements incorporated into RISC OS 5. Eventually going back to a single operating system and frankly that is not a moment too soon.

This one act was wiped out the divisive break-up of the market, not instantaneously, but over a period of time perhaps six months maybe a little longer. At that point we will see all the strands of the market coming back together and we can move forward as a single unit again.

Rob Donaldson
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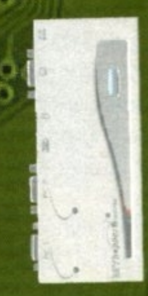
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Castle buys RISC OS from Pace

Following the success of their Iyonix PC launch last year, Castle Technology have secured the previously uncertain future of RISC OS by buying the entire operating system from Pace.

Pace acquired RISC OS when they bought the assets of Element 14 in 1999 when it was split up to relinquish the value of ARM shares held within Acorn at the time. The staff at the former Acorn headquarters in Cambridge were all transferred to Pace, as was the ownership of RISC OS.

Since then, Pace has only produced a couple of products based upon RISC OS, the most popular of which was the Bush TV with integrated Set Top Box. Last year, Pace announced that it would no longer be continuing its RISC OS development, and many ex-Acorn staff were made redundant as a result. Since that date, the future of RISC OS has been in question, with Pace having little interest in its development.

It now transpires that many of the ex-Pace/Acorn staff formed a new company called Tematic Ltd, who were the team responsible for bringing the 32-bit version of RISC OS licensed from Pace to the Iyonix PC for Castle in the form of RISC OS 5, and are now looking at new opportunities for RISC OS on the countless mass market ARM-powered devices, phones and PDAs now available.

The purchase, announced on July 4th, nicely coincided with the American Independence day, although given that RISC OS is now owned by the largest hardware developer in the marketplace, other hardware developers might baulk at the irony of that date.

Castle paid an undisclosed cash sum to Pace, and the deal also includes providing ongoing technical support for Pace's existing RISC OS-based products and the grant of a licence back to Pace for intellectual property rights.

Jack Lillingston, Castle's Managing Director, said, "The purchase of this technology combines perfectly with our expertise in manufacturing and marketing RISC OS computers. This deal will allow us to be at the heart of exciting new products." Jack concluded, "RISC OS provides a proven, small-footprint solution, for cutting edge products such as handheld media devices; we are all very excited with this new development and relish the future for RISC OS"

Castle appears to be feeding of the success of their Iyonix PC released last year, and still the world's only X-Scale-based desktop computer, and Pace, keen to further reduce their head-count even further as they slide into the red with ever-falling sales of set-top boxes, seem to have finally dropped their price tag to something affordable, while ensuring that whoever the buyer is has the ability to support their existing RISC OS set-top boxes.

RISC OS Ltd, who's original Head Licence for RISC OS 4 was with Pace, issued a statement to shareholders stating that this licence has now been transferred to Castle Technology, who also become a major shareholder of RISC OS Ltd having the "A" shares transferred to them from Pace. It is not yet known whether Castle will take up this opportunity to have a director placed on the board.

All the existing RISC OS 4 licences from third party developers such as Riscstation and Microdigital held with RISC OS Ltd remain unchanged by the deal, as does the Select Scheme and availability of RISC OS 4. RISC OS Ltd are already in negotiations with Castle about implementing many of the features of Select for Iyonix PC users on RISC OS 5.

Initial reaction to the announcement in the developer community seems mixed. Martin Wuerthner of MW Software, the developers of *Artworks 2*, was optimistic on hearing the news. "I think this has been the best news for the RISC OS platform for a long time, only the release of RISC OS 4 by RISC OS Ltd and the release of Castle's Iyonix were of equal significance". He continues "I am glad that the ownership of RISC OS has returned to a member of the RISC OS market who cares about it. Castle have shown outstanding performance in designing, producing and improving the Iyonix and are thus the ideal candidate to foster our cherished operating system."

Stuart Tyrrell, hardware developer for RISC OS machines was less enthusiastic. "It will be very tempting for Castle to make decisions at the expense of the commercial developer community, and this might harm Castle themselves (and therefore RISC OS) longer term" Stuart points out that we are back to the days of hardware sales subsidising software development, the model which Acorn themselves adopted.

What do you think of the change of ownership? Good for the market, or stifling competition? We'd love to hear your view, contact details on the letters page on auletters@acornuser.com.

Omega and Alpha shipping?

Reports are trickling though that some dealers have received production Omegas to ship to customers. We've had no confirmation from Microdigital themselves, although this is no surprise as they have stated at a number of events they don't "deal with the press" so we can only report on what we are hearing, rather than from the horse's mouth as we'd prefer. The machines are apparently caveat-free, as opposed to the pre-production machines that Microdigital were handing out at the recent Wakefield and Dutch Expo 2003 shows.

Pace plunge into red

Plunging sales of digital TV set-top boxes have dragged manufacturer Pace Micro Technology into the red. The group, which has borne the brunt of ITV Digital's collapse and the turmoil of cable operators NTL and Telewest, saw full-year sales halve to £166.1m.

That led to a pre-tax loss before one-off items of £16.2m, compared to a profit of £13.1m a year ago. But Pace said results for the second half of the financial year had seen "a significant improvement". The company said its performance had been boosted by its cost-cutting drive, which had seen its workforce shrink from 900 last year to around 650, which included many of the ex-Acorn staff working on RISC OS-related projects.

As a result, operating losses had been reduced to £400,000 in the second half from the £15.7m reported in the first half. Pace, which will not pay shareholders a

dividend for last year, said it expected the UK market to stabilise at its current levels.

Aemulor 2.2 released

Aemulor, the 26-bit emulator for Castle's Iyonix PC has been upgraded to version 2.2 The new version fixes many bugs reported in 2.1, and improves emulation in a number of areas, meaning compatibility is improved and the range of applications Aemulor can run is much greater.

Some of the major changes are:

Memory requirements reduced; ARM610 and StrongARM engines, since they're mutually exclusive, now share workspace to roughly halve the memory requirements.

Aemulor now translates error numbers returned by the Internet module (Socket SWIs) for compatibility with 26-bit apps that assume RISC OS 4 behaviour (&00-&7F rather than &20E00-&20E7F). This should allow applications like ArcWeb and Fresco to fetch online pages and not just local ones.

Aemulor now supports 26-bit environment handlers (for example, escape handler, exit handler, error handler) and vector claimants.

¥ Aemulor UI now masks out the events that it doesn't need (in particular null events which are now used and masked properly)

Interactive help added

Applications using the StrongARM-engine while 26-bit modules with service call handlers are loaded were unstable, giving essentially random failures because service call handlers can be invoked at any time, and the foreground state of the emulated app wasn't being preserved. This problem did not occur with the ARM610 engine, and has now been fixed in the StrongARM engine also.

Aemulor was interfering with 32-bit GhostScript (ps2pdf) The * command was expanding (via macros) to exceed 256 char limit in Aemulor's handling of macros; behaviour should now be the same as RISC OS 5 OS_CLI, with 1KB buffers

Aemulor was interfering with 32-bit TaskUsage by introducing a space at the start of the command tail passed to a module when entered (via OS_Module 2)

Large config files (those with more than about 30 apps), caused Aemulor to data abort when the UI started up. Resizing of app/module window definitions incorrectly calculated the new size, thus corrupting the emulated RMA

Emulated apps issuing WimpTask would sometimes find the *command corrupted/truncated, typically giving a 'file not found' error owing to the *command remaining on the SVC stack but not being used until later (*WimpTask)

Shutdown delay removed. Aemulor was trying to access the hard disk after the *Shutdown command had been processed, thus causing a 2 second delay while the hard disk silently spun up again!

Aemulor was unsqueezing 32-bit modules on behalf of the OS, but doing it incorrectly in specific cases; only known to give a problem with a pre-release version of 32-bit PhotoDesk. Aemulor now leaves unsqueezing 32-bit modules to RISC OS, for safety, and has its own corrected unsqueezing code for 26-bit modules.

Aemulor was loading the DigitalRenderer module even though it is marked as 32-bit compatible. Caused by the module SWI chunk having the X bit set which is very unusual but ignored by RISC OS and now ignored by Aemulor to ensure compatibility.

While Aemulor is loaded all applications, including 32-bit apps are, unfortunately, limited to a maximum of 28MB each. Applications requesting more than this amount could cause unpredictable failures while Aemulor is running, for example, creating a 4800x2400x16m sprite in !Paint demonstrates this problem.

Aemulor now correctly prevents apps from claiming more than this 28MB limit, but we recommend loading Aemulor in PreDesk because problems will still occur if there are apps with more than 28MB already running when you start Aemulor manually.

Apps using the SA engine and running in a TaskWindow could result in unpredictable failures if task switching is performed on returning from an IRQ (callback) because the state info for the SA engine wasn't being preserved. It is now. This problem could also cause failures in 32-bit apps running alongside the TaskWindow.

Aemulor now consults the Run$Path allowing users to manually start 26-bit applications in their Library directory, for example, without having to type the full pathname or change directory.

'Add' button and dialogue box added to the Applications window, allowing entry of wildcarded filenames such as "*.!Schema2" so that the list doesn't need to be altered if Schema2 is moved to another location.

The 2.2 upgrade is free to all registered users, and can be obtained by logging into **www.aemulor.com** with the userid and password which was used to purchase the software. There is a download link from the support page.

Technical Reference for Iyonix

Castle have released the Technical Reference Manual for their Iyonix PC. Badged as the definitive hardware reference guide to the motherboard used in the Iyonix PC it provides full technical details as follows:

- system and architecture overview
- the 200MHz DDR RAM interface
- power requirements and the software power control
- the audio input/output system and details of the Risc PC compatible audio connectivity
- the non volatile EEPROM and flash memory and accessing the RTC
- the enhanced expansion bus implementation
- the ATA100 UDMA hard disc interface
- using the floppy drive
- the motherboard gigabit networking hardware
- USB ports and power control
- the RS232, IrDA, MIDI, and S/PDIF serial ports
- a survey of all of the option headers
- the 64-bit PCI bus and its low latency bus mastering capabilities
- the programmable logic function and register layout
- a full bill of materials and build options
- references, standards, and datasheets

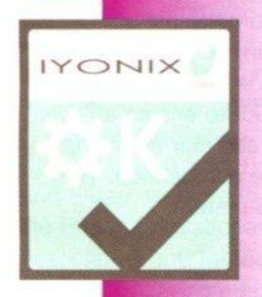


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The Technical Reference is over 93 pages and is supplied in a sturdy 4 hole ring binder with full size A2 schematics of the hardware, and A3 engineering drawings of the front and rear side of the PCB. The manual also contains an updated (Issue 6) Expansion Card Specification (the Acorn Podule specifications).

Aimed primarily at developers and volume OEMs, the accompanying CD-ROM also contains electronic copies of many examples of the artwork and datasheets used in the creation of the motherboard and this manual.

This Technical Reference Manual (product code TEC10) is priced at £99 (delivery is £6). Castle are keen to point out that this price is the same as the original Risc PC TRM that was released nearly 10 years ago.

Meanwhile, not content with purchasing RISC OS, Castle are offering a free 6-in-1 USB card reader with every Iyonix purchased in July and August.

The card reader, worth around £30, supports six of the most popular types of removable card media in use today: CompactFlash, Smart Media, Memory Stick, Multimedia Card, Secure Digital media and IBM Microdrive cards.

The card reader enables fast and simple data exchange between a huge range of digital cameras, MP3 players and many other compatible devices.

User group meetings

The RISC OS User Group of London (ROUGOL) meets on the third Monday evening of every month, at The Blue-Eyed Maid, 173 Borough High Street, London SE1 1HR. The provisional September meeting is a talk and demonstration by Peter Naulls (of **www.drobe.co.uk**, the UNIX Porting Project, and Linux for the Iyonix), and the provisional October meeting is a hands-on networking evening featuring RISC OS and Windows (and maybe more). Admittance and membership are free. For more information, e-mail **info@rougol.jellybaby.net** or phone 07876 035 495.

The ICENI Computer Club meets on the first Wednesday evening of every month at Bourne Vale Social Club, Halifax Road, IPSWICH, IP2 8RE. The September meeting will be a visit by Jack Lillingston with Castle's Iyonix; the October meeting will cover CD burning on Iyonix, Windows PC, and possibly also Risc PC or Lintel systems. Entry to your first meeting is free. For more information, e-mail **iceni@archipel.demon.co.uk** or phone 01255 503048.

Southampton Acorn Users Group: Normally the second Monday in every month, except no meeting in August. Provisional dates for the rest of 2003: September 8th; October 13th; November 10th; and December 8th.

BAUG: The oldest established Acorn/RISCOS Group, now in their 22nd year:

August 12th No meeting College closed for Summer Holidays

August 26th No meeting College closed for Summer Holidays

September 09th Programme To be advised

September 23rd CD-burning on Iyonix

Email: **dgmcdowell@bigfoot.com** Web site **http://come.to/baug**

ARM Programming on the Web

You may remember ARM Assembly Programming being published way back in 1987 by Computer Concepts. This guide to the ARM processor how to program it in assembler is now available to read over the Web, or download and print via PDF files: **www.peter-cockerell.net:8080/aalp/**

Litigation against UK Web sites

The Royal National Institute for the Blind confirmed that it is supporting a number of individuals in cases against companies that are failing to make Web sites accessible to visually impaired users. Under the UK's 1995 Disability Discrimination Act, organisations are required to make reasonable adjustments to their systems to allow people with disabilities to access them. "Litigation will particularly apply when people who cannot use Web sites are excluded from financial incentives, such as when low-cost airlines offer cheaper flights online rather than over the phone," said Suzanne Mercer, an IT and e-commerce attorney.

Mobiles live up to their name

For ten years, four Ukrainian cities have hosted celebrations of mobile communications. The key event is mobile handset throwing. The first stage of the competition involves throwing mobiles presented by sponsors of the event. Some models, apparently, are still working after that. In the second stage, ten finalists throw the same model, a Samsung SGH-R200, to ensure an even playing field. This year, four additional cities are joining the competition. The current record is 55 meters.

Wi-Fi group approves new standard

Products using the 802.11g standard received a clean bill of health from the Wi-Fi Alliance, an influential industry group. The Alliance has certified its first batch of products for interoperability. This means that the products have passed tests proving they are compatible with one another, enabling users to seamlessly connect to the Internet.

Protecting its proprietary pork

Hormel Foods, which has sold over 6 billion cans of its Spam "lunch" meat since it was introduced in 1937, challenged Spam Arrest's applications to trademark its own company name with the US Patent and Trademark office. But on its Web site, Hormel states that it does not object to use of the word spam as a "slang term," as long as pictures of the meat are not used with such references. Spam, as a term for Internet junk mail, originated with a Monty Python comedy sketch. In it, a group of patrons at a restaurant chant the word "spam" in louder and louder volume, drowning out other conversation.

APDL/Proaction upgrades

APDL have released two patches to their software portfolio. The first is to Repton 2, which seemed to suffer from completion issues, namely it was impossible to complete the first desktop release. This, along with a few other minor issues, has now been resolved and is available for owners of the APDL-issued CD-ROM edition.

Users of previous versions can upgrade to the latest CD edition for £10 inclusive. For a limited period, you can upgrade any version of Repton to the new Desktop Repton for just £15, return the original discs including packaging to APDL. You will not get these discs back, but will instead receive the latest edition.

Secondly, there was a bug present in versions of Rhapsody 4 around v4.09 which meant that pressing Return after entering text into a score didn't function correctly. This, along with a few other minor issues, has now been resolved and is available for owners of the APDL-issued CD-ROM edition from **www.apdl.co.uk/proact.htm**

Users of previous Clares-issued versions can upgrade to the latest CD edition for £10 inclusive. Please return the discs to APDL, but not the box or manuals.

TV on your Iyonix?

Simon Wilson has revealed details of a project to port a Linux driver to RISC OS which will allow a PCI TV Card to be used in Castle's Iyonix. The project makes use of the open source nature of Linux, and the fact that the Iyonix PCI API is loosely based upon Linux to bring desktop TV to Iyonix users. The driver is restricted to certain makes of TV card, those that employ the Conexant BT848/849/879 chipset (a Pinnacle PCTV Rave is one example)

The TV card works by communicating directly with the Iyonix PCI-based video card so it can plot images directly to the screen without involving the CPU, which means watching TV while working won't impact performance much.

TV Card Project:

http://ucsu.colorado.edu/~wilsonsl/iyonix/tvcard.html
Iyonix PCI Specification:
www.iyonix.com/32bit/PCI_API.shtml

CJE offer Iyonix cameras

CJE Micro's have announced the availability of two new digital cameras for the Iyonix and Castle USB podule. They are the Yakumo Mega-Image IV 4-MegaPixel Digital Camera for £176 inc VAT and delivery, featuring:

- CMOS image sensor
- LCD display 1.5in TFT
- Lens: fixed focus, type 5G, F.2.8, 4x Digital zoom
- Mode: macro 55-80 cm; normal 160 cm ~infinity
- Resolution: 2304x1728 (4M), 2048x1536 (3M), 1600x1200 (2M); 1280x1024 (1.3M)
- Memory: built-in 16 MB NAND Flash + 16 MB SDRAM; slot for SD/MMC memory card
- File format: EXIF 2.1 comp (JPEG) / AVI (video)
- Lens: fixed, switchable between Macro and normal state
- Focus length: Macro 40-70 cm; normal 70cm ~ infinite
- Flash: automatic, off, forced
- Self-timer with 10 second delay
- White balance: automatic, sun, shadow, tungsten, fluorescent
- Video: QVGA resolution, 15 fps
- Web cam: 320x240 @ 20 fps
- Connection via USB 1.1
- DPOF direct print compatible
- Built-in microphone
- TV out NTSC / PAL
- Power 2x AA alkaline /NiMH batteries
- Also suitable for Windows 98/2000/ME/XP and Mac O.S 8.9 and above

While the Iyonix can download the pictures stored on the internal memory or SD/MMC card, we aren't aware of any drivers that allow you to use the Webcam feature on the Iyonix as yet.

The other camera is the Olympus C4000Z 4Mpixel 3x Optical Zoom camera £380 inc VAT and Delivery, featuring:

- 4.0 million pixels for image processing.
- 4.140.000 pixel 1/1.8 inch CCD
- 3x optical zoom, equivalent to 32 - 96 mm
- 3.5x digital zoom
- Bright zoom lens F2.8
- Versatile automatic & manual functions for exposure, focus, white balance
- Easy "virtual dial" operation
- QuickTime Motion JPEG
- USB AutoConnect
- Video interface

CJE Micros, Tel: +44 (0)1903 523222 Fax: +44 (0) 1903 523679 E-mail: sales@cjemicros.co.uk Web: **www.cjemicros.co.uk**

78 Brighton Road, Worthing, BN11 2EN, England.

MiniB updates

The MiniB, the "DIY" BBC Micro kit the size of a floppy disc has been updated. Now available to download with an updated version of the OS which includes a more complete implementation and documentation. There are also details of buying ready-built MiniB boards for those who prefer not build it themselves.

Existing MiniB owners can upload the new ROM image in circuit from a parallel port and then use the built-in MiniB *SRWRITE command. For machines with no parallel port a parallel device driver is available to download for free which implements Parallel_HardwareAddress and Parallel_Op but over USB.

An updated DFSReader is now available which is a simple desktop filer which allows BBC DFS format floppies to be read and written under RISC OS. The latest version is now compatible with 32-bit systems such as the Iyonix PC.

All updates, and more information on the project, can be found at:
www.sprow.co.uk/bbc

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Graphic Design in the Real World, Part 3

Although it's not necessary, you often find that visual images are used to great effect in logo design. This often requires illustration, and there have been a number of jobs where my old-fashioned skills of drawing have had the cobwebs dusted off. Now, at one time everything was done by hand, but since the computer revolution almost everything is done with the keyboard and the mouse.

While it was very easy swapping the time-heavy jobs for a few mouse-clicks, it was a tough education changing from creating illustrations with pen and paper to re-creating them on-screen. Eventually, however, I learnt a new way of rendering visual images and over the years discovered the advantages that vector applications like *Draw* and *ArtWorks* can offer.

The graphic doesn't have to very sophisticated. One job required a depiction of a diamond for a jeweller's logo. An oval created in *Draw* started it off, and a few geometric shapes added results in an adequate representation of a gemstone. Not brilliant art, admitted, but it very quickly suggests to you what the company does.

When I decided to use a classical urn to enhance a logo for an organisation concerned with the arts, I stylised the drawing. The most important element of the urn is its curved sides; once you've done one side it's easy to copy it and flip it over to form the other side. A couple of straight lines to join the two sides up and you have the basic vase-like shape. I added a rim and a base, a zig-zag stripe through the middle, and a shadow, but the basic shape is simple.

Other designs have been much more involved, such as a picture of a garden for a landscape gardener. It's still stylised, but there's a lot more to it. The flat, coloured shapes were done first: the sky, the various shades of green to represent grass, the simple white cloud outline. The tree trunk was then added, and over that I drew one circle in black, copied it a few times, changed one of the copies to red and copied that. Then I created a simple leaf shape in green and copied and rotated it a few times. The flower bed was done in roughly the same way: create simple shapes, fill them different colours, and arrange them to convey the effect.















You might have deduced that I favour simplicity. If a design is simple and works, it's difficult to better it. However, there are occasions when you need to go into a little more detail. If a brief asks for a specific drawing of an eye, for example, you have to do it, and you build up a drawing with carefully drawn lines and layers. It's a different way of thinking and takes a while to give the impression that it's easy.

I had a job which required a drawing of a Roman centurion; I could have drawn it with pencil and paper and then scanned it, but I relished the challenge of tackling it on-screen. The resulting Drawfile consisted of layers of shapes and simple tints of black. The staff was a long rectangle, two or three circular shapes, a clip art eagle, and an open font to create the lettering. A few areas of gray to suggest shadows finish the piece off.

An impression of accuracy is sometimes needed. When a pub called The Covenanters needed a new sign, I wanted to use a concept which suggested the historical connections with the name. A little research revealed incidents where the Covenanters raised spears and banners; I searched through my boyhood collection of Look and Learn for suitable images and constructed silhouettes of spears and banners.

However, when a traditional music and song organisation asked for some illustrations my love of simplicity won out once again: my depictions of various instruments and singers were all drawn on-screen very simply, broken down into their essential elements only. Accuracy was certainly not what was required, but rough sketches conveying the fun and excitement of learning music in an informal environment. These illustrations were also great fun to do!

Drawing in general is something which most people say they can't do. Very detailed artwork does require particular artistic skills, but simple line drawings can require imagination as much if not more than draughtsmanship.

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Going Dutch

The RISC OS Expo 2003 took place on June 21st. Defying the trend of other recent RISC OS shows, it maintained its original format as regards length and size of venue. The show has a consistent venue that has been unchanged for some years now; I wrote briefly about the many pleasurable ways of reaching it from the UK in this magazine, about a year ago.

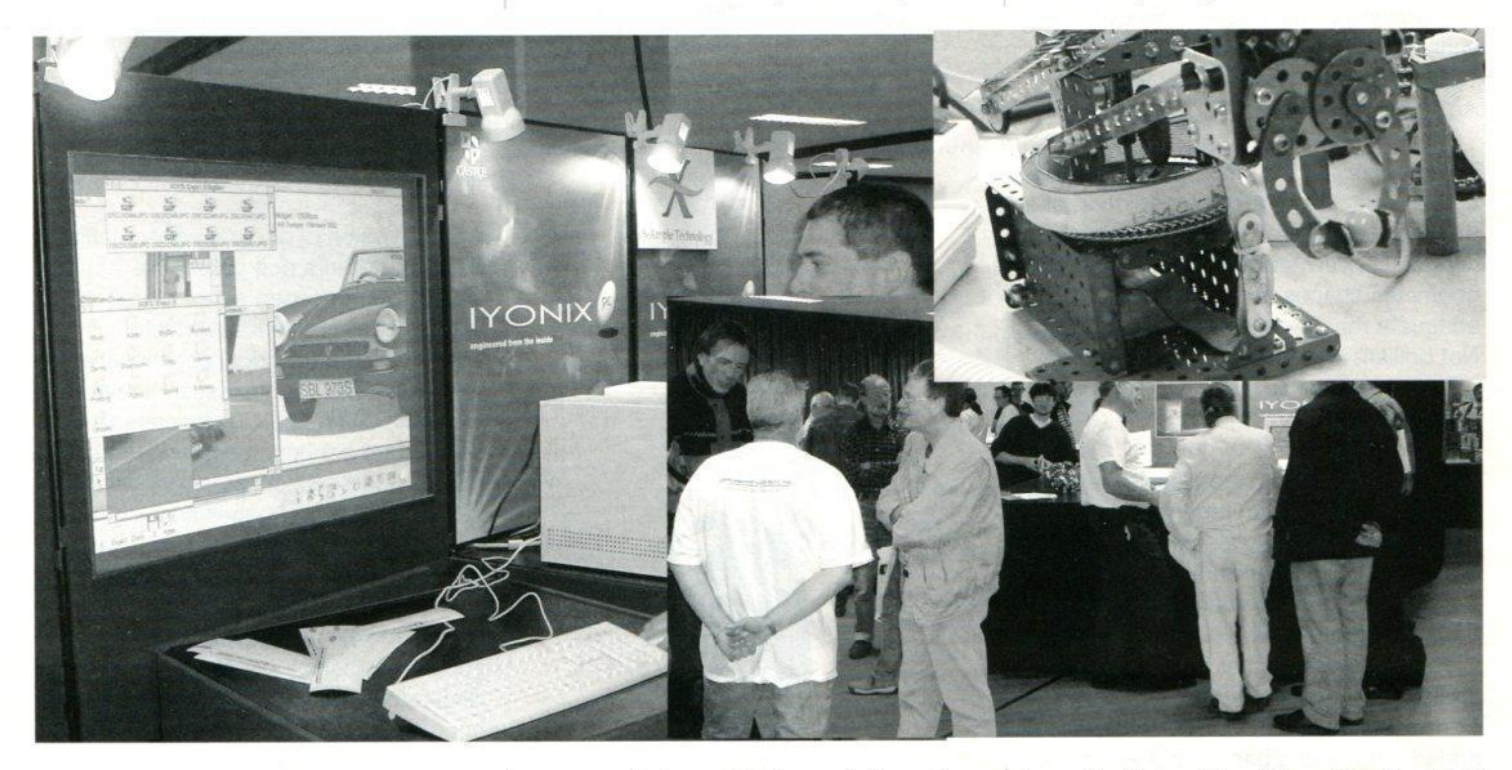
It was rather a disappointment to me, therefore, that almost none of "les rosbeefs", apart from exhibitors, took the chance to take an enjoyable trip to one of Europe's friendliest countries on a very sunny weekend.

Despite this traditional British parochialism, the show was fairly busy shortly after I arrived at about 10:30 local time. (One should keep in mind that some visitors were travelling from much further afield, including Germany, Belgium, France and other European countries).

The opening theatre presentation took place at 11:00, and saw the first real attempt by a RISC OS company to produce a dual language presentation. This featured Castle and their distributor in the Netherlands, X-Ample. They had arranged two Iyonix systems connected to two projectors, with one showing a slide show, and the other displaying an Iyonix desktop, so that points raised in the presentation could be demonstrated live.

Jack Lillingston (Castle) and Paul Reuvers (X-Ample) took turns to present in English and Dutch respectively, in roughly minute long sections. This worked quite well, although the adjoining sections weren't intended to be direct translations, and there was a little confusion sometimes as the speakers changed the order in which they were talking.

The slide presentation was completely different to what I have seen Castle present previously; apparently it had been prepared by X-Ample (but still used Photodesk Ltd's OHP2). However, there



was very little genuinely new information; it was the first presentation about the Iyonix given at the RISC OS Expo, so concentrated on introducing the Iyonix to those unfamiliar with it.

In questions after the talk, Jack explained that the reason the Iyonix uses 200MHz DDR SDRAM is because that is the fastest that the 80321 X-Scale processor in the Iyonix supports. He did point out that all other current X-Scale processors can only use 100MHz DDR SDRAM. Though both options still represent a huge improvement over the memory in the Risc PC.

Jack reiterated previous comments about the efficiency of the RISC OS graphics system, meaning that a powerful AGP graphics card would be wasteful for ordinary desktop use. The 32MB nVidia GeForce 2 MX400 in the Iyonix does provide very impressive desktop performance, and is also sufficiently low-end as not to require a separate fan, important for the computer's extreme quietness.

However, Jack did say this was the graphic card used "at the moment"; this seemed a strong hint that higher specified cards may be used in future. The Iyonix's PCI bus is ideal for trying out new graphics cards options, and posts on the Iyonix support mailing list indicate that some third party developers are already doing so, while others are investigating writing drivers for other PCI cards for the Iyonix, not just graphics cards.

Jack was also asked about 3D graphics acceleration. Although 2D acceleration (essential with high resolution and colour depth screen modes) is already in use on the Iyonix, the chances of 3D acceleration in the near future did not seem so good. Jack rightly pointed out that 3D acceleration is "mainly only useful for games", and described its implementation as "an option for the future", not something being worked on at present.

One concern for potential Iyonix owners has been the absence of a proper monitor mode definition file (MDF)

generator. Although the computer itself is shipped with a wide variety of MDFs for different monitors, there is no generator included. This isn't a significant problem, as most monitors will function entirely happily with an MDF from a similar monitor. However, when pushing a monitor to its limits, it is much better to have a properly created MDF, to avoid any possible problems. Jack promised that a suitable generator was "on the list", and would arrive "fairly soon".

Jack was asked yet again whether RISC OS Select would appear on the Iyonix. He replied that Castle and RISCOS Ltd "haven't agreed the commercial terms yet, but I hope it will happen in the future". Asked exactly how this would be achieved, the response was "you have to leave that to us to decide" (meaning Castle and RISCOS Ltd). This was, of course, before the Castle announcement of the purchase of RISC OS from Pace.

This was the first RISC OS show since Castle released their USB mass storage drivers for the Iyonix. They were very much in evidence at the show, with dealers such as R-Comp selling multi-format USB memory card readers suitable for use with digital cameras and other products, and Castle's own stand even being open for visitors to plug in their own USB devices (I saw one visitor plug his USB watch into the Iyonix).

The Iyonix USB mass storage drivers have the advantage of not requiring any extra RISC OS software or hardware to operate; so long as the device supports the required specifications, there is no problem. R-Comp's Iyonix specific instructions for the multi-format card reader I purchased read something along the lines of "plug into your Iyonix, click on one of the iconbar icons to open a filer window"; and that's it!

Many people have been purchasing ordinary USB devices on the open market, and finding they work with their Iyonix without any configuration at all. Other users, including myself, are happy to pay a little more for USB devices already tested on the Iyonix and supported in that configuration by a RISC OS dealer. With multi-format USB card readers for the Iyonix costing roughly £30 (perhaps £2 extra if bought through a RISC OS dealer), as against £80 or more for equivalent functionality on a Risc PC, there's little comparison.

Back at Castle's stand, I also asked Jack about upgrade options for the Iyonix. Like a lot of other people, I've purchased a 512MB Iyonix with an 80GB hard disk drive. I already knew that a second 80GB (or, now, 120GB) hard disk was an option, however Jack confirmed that if I fitted an internal multi-format USB memory card reader, as well as keeping the floppy disk drive, there would be no space for a second internal 3.5" hard disk, unless I fitted it in the free 5.25" slot using an adapter.

This wasn't a problem, as it turned out that R-Comp had been unable to obtain sufficient supplies of internal card readers for the show anyway; and someone else had pointed out to me the advantages of external card readers (you can easily detach them from your computer, carry them round, and plug them into a friend's Iyonix or even PC). It was interesting to note that one of Castle's demo systems had never had a floppy disk drive fitted at all.

I also asked if there was any upgrade beyond the 512MB RAM with which my Iyonix shipped. Jack said that Castle had indeed tested a 1GB module in the Iyonix's single SDRAM slot. However, at £500 or more for the upgrade, he didn't consider it an option likely to be popular with most RISC OS users. While 1GB of RAM may be useful if running Linux on the Iyonix, under RISC OS even 512MB is far more than enough.



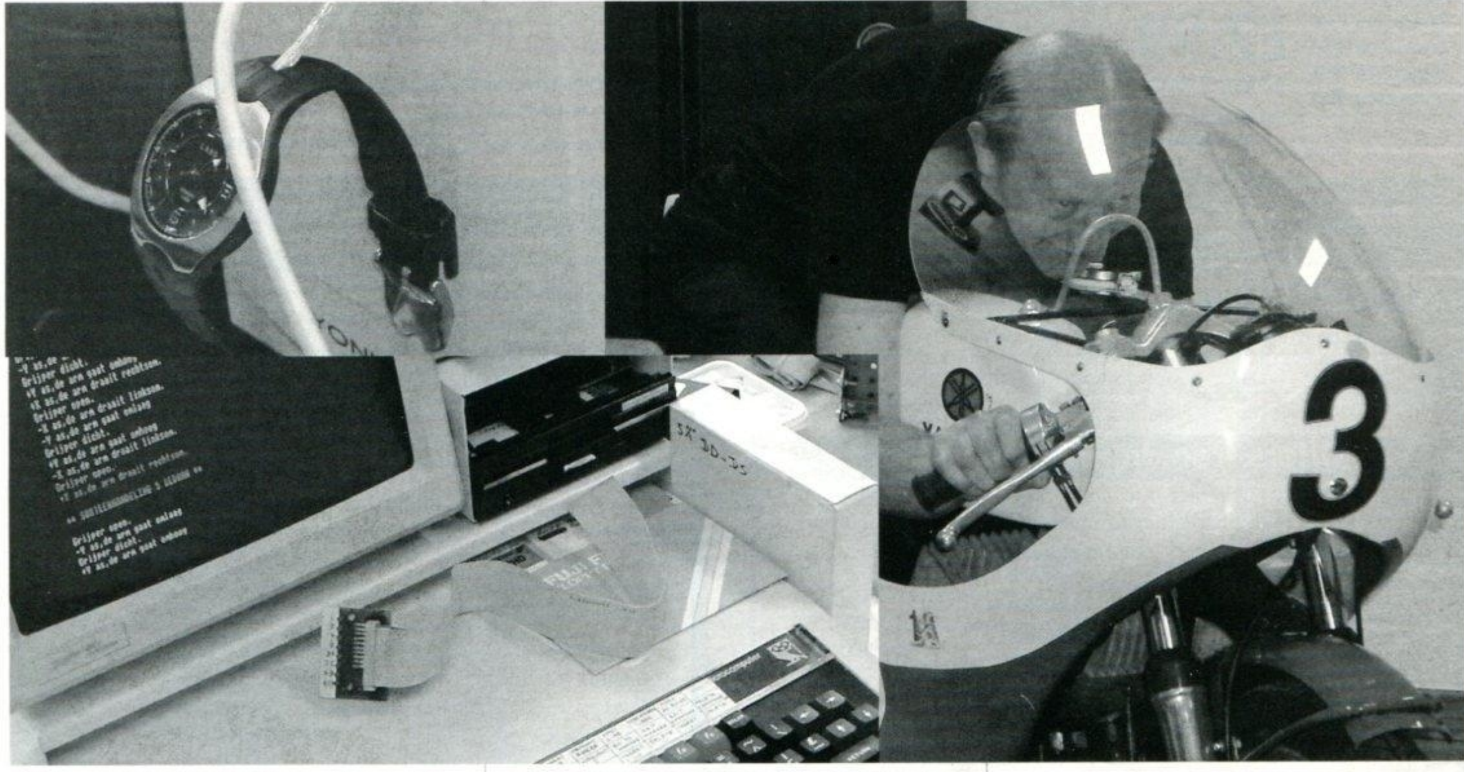
Back in the red corner, MicroDigital had news about their Windows laptops running RISC OS 4 under emulation. As well as the previously announced specification upgrades to the original Alpha laptop, MicroDigital also bowed to pressure and introduced an Alpha Professional laptop. The principal distinction is that, while the Alpha has a 2GHz Celeron processor, the Alpha Professional has a 2.4GHz Pentium 4 processor.

The Alpha Professional laptop has various facilities not present on the ordinary Alpha, but it wasn't explained which of these were accessible directly

from RISC OS under emulation (lack of proper networking from RISC OS on an Alpha has been cited as a major stumbling block). A little investigation revealed that the 2GHz Celeron Alpha was selling for £999 including VAT, and the 2.4GHz Pentium 4 Alpha Professional for £1330 including VAT.

The MicroDigital stand itself was very impressive, with two motorbikes making a re-appearance, along with laptops, Omegas of various shapes and sizes (and well prepared for their outing with high resolution photographs and other demonstrations), and plenty of people to discuss it all.

David Atkins' talk in the theatre contained many criticisms of the RISC OS Press. He also had to contend with two very determined questioners quite early on. One of them was incensed at failure to deliver on promises made to his company about Omega delivery dates. The other had in-depth technical knowledge of the Xilinx software used for circuit board design by MicroDigital, and was very concerned by some of the statements made about track lengths during the design phase.



A further questioner asked if MicroDigital could not try and make use of the Press for publicity, rather than attacking them. David Atkins did not think much of this suggestion, and said that MicroDigital no longer talked to the Press, at all.

On a more positive note, David's comments about the Press were at least accompanied by some actions "to prove them wrong". As he was speaking, Frank from Desk, assisted by David Prosser, brought in boxed Omega and Alpha computers. Frank then read out a list of names of people who could come and collect their computers.

Escaping the anger and acrimony in the presentation room, I found reminders that the Utrecht show has qualities not much seen at British RISC OS shows. A great deal of emphasis is placed upon the user group aspect of the show. So there were stands for "Regio Den Haag", "Regio Oost", and other regions of The Netherlands; and also for "Werkgroep Hardware", "Werkgroep Genealogy" and "Werkgroep 8-bits". There was also a substantial stand run by RISCOS.be, the Belgian RISC OS user group.

Among the various regions and workgroups, all sorts of projects were on display. This went right down to the level of soldering irons being available, and in use, on some stands. There were two different sorts of robot arms (one built using Meccano and controlled by a BBC), and all sorts of other attractions.

After the MicroDigital presentation, one of the Dutch user group stands also saw a newly delivered Omega unboxed and brought into action by its owner. On the RISCOS.be stand, there was a telephone logging system based upon a Risc PC with a custom podule and custom software, destined for use in industrial environments and utilising input from several different members of the user group.

Another exhibitor encouraging people to take things into their own hands, but this time from the UK, was the Unix Porting Project, represented by Peter Naulls. Peter is also well known for his involvement with the Drobe website and with Linux for the Iyonix, so it was perhaps appropriate that the stand boasted two Iyonix systems showing different aspects of development. But there were also the diagrams explaining the process by which Unix (or even Linux) software can be made available to RISC OS users, as well as some CDs to take away and try out what had been done already.

As always, continental developers and dealers such as Uffenkamp Computer Systems, Martin Wuerthner, Desk, X-Ample and others were very much in evidence. The Big Ben Club are once again to be congratulated in managing to keep the show running in what is pretty much a prestige venue. They had allocated themselves only a quite small stand, on this occasion displaying an Iyonix, but it is due in part to their hard work that the RISC OS Expo was once again a success, and very enjoyable.

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Killer Art

Back when we really needed it, Computer Concepts Ltd devised two "killer apps": *Impression* and a little later, *ArtWorks*. They were needed at a time when computers were revolutionising the graphics and publishing businesses. *Impression* brought professional desktop publishing to the Acorn platform, while with *ArtWorks* we finally had an illustration application which could stand beside Illustrator or Freehand on Macs and PCs. It was a great disappointment when Computer Concepts decided not to continue to develop these applications, although both are still the choice for many on RISC OS.

Without continued development, *ArtWorks* lost ground over time, but Martin Wuerthner (MW Software) began to provide plug-ins which improved functionality. Therefore it was with some excitement that I heard about the release of *ArtWorks 2*, the first new version for many years. I was eager to see what changes and improvements there were. It's worth mentioning that although *ArtWorks 2* is the first version to run natively on Castle's XScale-powered Iyonix, I'm running it on a plain old Risc PC.

Installation was easy and pain-free. When you open Choices from the iconbar you notice there are new global choice options, such as JPEG and Crystal modules; more of Crystal later, but the JPEG module means that now we can use JPEGs within *ArtWorks* files without them being converted to Sprites.

When the first blank page is opened, the first thing you'll see is that there are many more tools on the tool bar. All the older tools are there, but a few of these have been enhanced; the Zoom tool, for example, now has some great features which are mouse-accessible from the Info Bar, including the ability to customise certain zoom settings.

There are new intersect capabilities, another major plus. This sort of function has long been standard on professional kits, and it's good to have them. With the new intersect capabilities we can create and combine new shapes very easily.

One of the most important skills you need to have if you're using RISC OS, particularly if you're working professionally, is communication with other platforms. Without that ability, you can encounter a great deal of frustration. ArtWorks 2 is a significant contribution to cross-platform compatabilty with its enhanced exporting facilities. You can still export as old *Freehand* and *Illustrator* files (although these have been well out of date for a long time, and can't be imported into any recent copies of *Freehand* and *Illustrator*, although *Illustrator* only requires a minor textual fix to import), and Drawfiles and Sprites, but now you have the option of exporting as SVG, a vector format used by PCs and Macs, or bitmaps in the form of TIFFs, or GIFs. The latter is extremely useful if you're creating graphics for use in Web pages; you can now create your image, save it out as a GIF and it's ready to use.

Text handling has always been little more than rudimentary with *ArtWorks*. The *TextArea* plug-in introduces more features which have been enjoyed in rival products such as *Freehand* and *Illustrator* for years. It allows you to drag out a text area in which you may apply styles to text in the same way as you would in a DTP programme. You can control the layout, font styles and characteristics (such as size, leading, and so on) with ease, you can create text areas with multiple columns and have the text flow from one column to another, and you can force text to the next column (this is achieved using the same key-shortcut as in *Impression*: Control+G), and features such as indentation and tabs are supported. You can even rotate the frame while the text remains fully editable. This is an astonishing leap forward and all of these features will be celebrated by users.

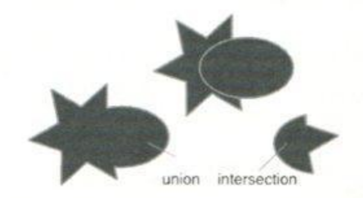
There is now an Auto-save function, a serious omission from the original, which allows you to pre-set the file to save at regular intervals. Anyone who has lost an hour's work after a crash will appreciate this feature.

If there is one new feature which I found jaw-droppingly amazing it was the transparency tool "Crystal." With it any object you create within *ArtWorks 2* can be made transparent, and the control you have over how it looks is tremendous. There are three types of transparency settings, each giving astounding results, and with the slide bar in the info window, with which you can select the percentage of transparency,

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you have a wide range of effects at your fingertips. The results have to be seen to be believed, although exporting the result as anything other than bitmap capture is limited (one exception is that the SVG export can handle transparency in certain settings), which slightly lessens the impact.

ArtWorks was a killer application when it was first released but, predictably when CC dropped it, lagged increasingly behind. Martin Wuerthner has dragged the program into the 21st century by the scruff of its neck, and should be rewarded for it. Professional users will appreciate being able to apply the new techniques, but absolutely anyone who uses *ArtWorks* will benefit from its enhanced functionality. Another great advantage is that now it's constantly being developed. For example, there wasn't any interactive help in my early copy, but the latest versions already have more than 300 entries.

I really want to proclaim the arrival of *ArtWorks 2* with all the fuss it deserves.



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Proper protection

Oh my word. Now they really have gone too far, publishing information about a Windows program? That really is just too much (and so on and so on). Why on earth would we do this? Well it is very simple. Legislation on computer software is such that, as many businesses don't realise, company directors are held responsible for the legality of the software on their company's computers.

What that means in practice is that if you (as a company director) are caught with unlicensed software on your computer system, you could expect a very big fine and up to two years in prison. Worse still, there are incentives of up to £10,000 for your employees to inform on you. We know that very many readers of *Acorn User* are in managerial positions in companies so we thought we ought to tell you.

Even if you're not running a business most RISC OS owners have at least one PC and often two or more on a network with their RISC OS machine. So that is another reason for using this sort of software so you can keep tabs on the software on your home machines.

No matter what you think of software companies like Microsoft, if you install or use their software without their permission, you're breaking the law and can expect prosecution. This is also something to bear in mind if you buy a very cheap PC with a "demonstration" operating system. It will be illegal and you will be liable. Ignorance of the law is not a permissible defence.

If just one person in your organisation has an unlicensed copy of a software title on their machine, you, as a director, are held to be personally responsible. It's you who could face the prison term, not them.

If you don't think your employees will tell on you, think again. If a sacked or disgruntled employee wanted to leave you something to remember, all they'd have to do is install an unlicensed piece of software on your computer system then report you.

There are different programs that you can get that will help you keep track of your software and their licences. A lot of them are very expensive so we have chosen one that isn't. We are giving an overview this time and in a couple of months we will report back on how easy it is has been to use.

The product is called ICS Licensing and it enables you to build and maintain a complete, up-to-date audit of your licence holding.

No matter how big your organisation or how widely distributed the hardware used by your staff you will be able to keep track of what's installed and where. You'll be able to tell at a glance what software you own and what software you don't.

You can find all the illegal and unlicensed software in your organisation and do something about it. You can track software installations and movements throughout your system. Whenever a new piece of software is installed anywhere in your system, you'll know about it.

It's quick and easy to maintain. You can make it part of your normal office housekeeping. A simple drag-and-drop system allows you to move software or licences from location to location at the click of a mouse.

There's no limit to the number of different software titles and installations you can add to the system and you can call up more than one separate database.

A sophisticated reporting facility allows you to view and print a number of management and executive reports or export the results to a text file or to a formatted Microsoft Excel spreadsheet.

Accurate auditing

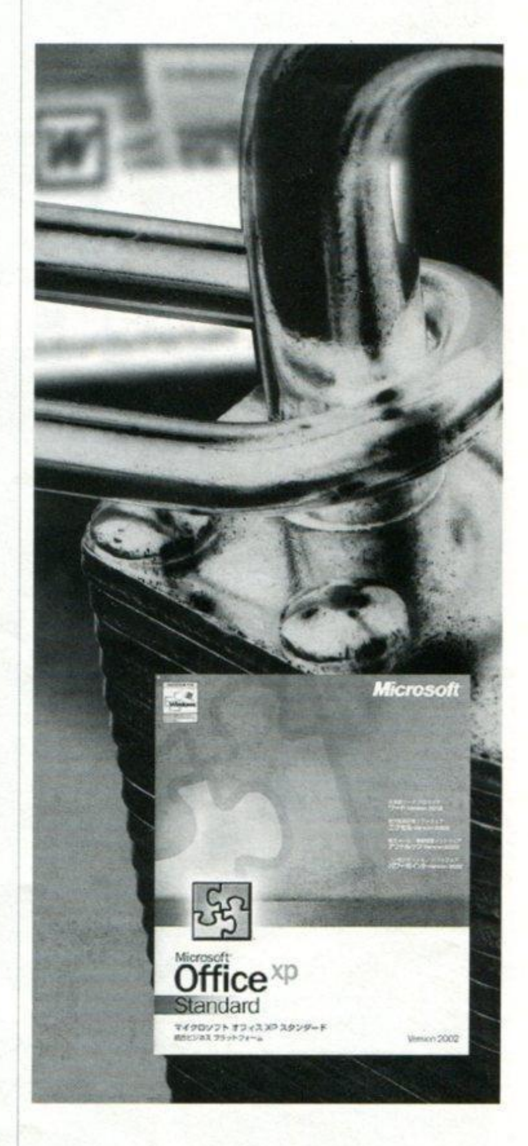
Maintaining an accurate audit of your organisation's software to avoid prosecution is a compelling enough reason to use this sort of software, but that's not the only thing it can be used for.

By knowing exactly what's installed throughout your system, you can make sure all your employees are using the same version of the software, eliminating the problems of incompatible data formats. Rather important in the world of Windows.

With a complete software inventory you can see what software or hardware upgrades are needed and who to give them to. Knowing what's installed on every machine, you'll be able to get the employee up and running again with minimal fuss and delay if their machine is put out of action by virus attack, hard disk failure or damage.

As you're in control, you'll be able to identify and discipline staff caught downloading programs from the internet without permission.

There are two versions: the standalone and the network. The latter is undoubtedly the more useful and that's the one we'll be looking at. If you want to take a look too you can download a demo version from the **www.icguk.biz** Web site.



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Get bloggered

What's the in-est thing on the Web? Blogging. From which we get an interesting new set of words: He blogs, we blog, they blog, have you seen the latest blog? Well I'll be bloggered! (Perhaps not that last one.)

In the world there are people who want to make their thoughts and actions available to everyone else. Want to make their lives public and I'm not talking about Webcams directed at coffee machines (what a great loss to the world that was).

Now any reasonably competent person can put together a diary in HTML form, with pictures. But it does take technical knowledge. So someone had the bright idea of creating a web interface that allows a person to have their diary on the Web without having to know anything clever about creating web pages.

Blog stands for Web Log. We don't use the term Web Log because that can also be a list of all the hits that a particular web site gets. So we have Blog.

You can be bloggered

We thought we'd get down to **www.blogger.com** and see what all the fuss was about and whether it really is to get into the blogger habit. (I can see we're going to have a lot of fun with this word.)

Blogger is a Web-based tool that helps you publish to the Web instantly, whenever the urge strikes as long as you are near a computer, but as it is web-based you only have to remember your username and password to add to your blog. There are quite a few blogger tools about the place but Blogger.com is the leading tool in this rapidly growing area of Web publishing.

A blog is a Web page made up of usually short, frequently updated posts that are arranged chronologically like a "what's new" page or a journal. The content and purposes of blogs varies greatly from links and commentary about other web sites, to news about a company/person/idea, to diaries, photos, poetry, mini-essays, project updates, even fiction. Blog posts are like instant messages to the Web.

Many blogs are personal, "what's on my mind" type musings. Others are collaborative efforts based on a specific topic or area of mutual interest. Some blogs are for play. Some are for work. Some are both.

Blogs can be an excellent team/department/company/family communication tools. They help small groups communicate in a way that is simpler and easier to follow than e-mail or discussion forums. Use a private blog on an intranet to allow team members to post related links, files, quotes, or commentary. Set up a family blog where relatives can share personal news. A blog can help keep everyone in the loop, promote cohesiveness and group culture, and provide an informal "voice" of a project or department to outsiders.

Blogger itself gives you a way to automate (and greatly accelerate) the blog publishing process without writing any code or worrying about installing any sort of server software or scripts. And it gives you control over the look and location of your blog. Instead of hand-coding your blog posts and frequently uploading the newest version of your page, you make posts to your blog by submitting a simple form on the Blogger Web site, and the results immediately show up on your site, with your design.

Getting started with Blogger takes just a few minutes. If you already have a Web site you want to use Blogger to publish to, you simply need FTP access to it. But if you don't already have a Web site, don't worry, Blogger will create one for you on BlogSpot.

The way it works is that you provide Blogger with a template of your page (or use one of several pre-designed ones) that indicates where you want your posts to appear. When you want to publish something, you simply enter it in a form. When you're ready, you hit a "Publish" button that will automatically send your new page to your Web server. No muss. No fuss. Total control.

If you're more sophisticated, your template can even contain script, such as server-side includes, ASP, or Cold Fusion pages, and that script will still be processed after the Blogger content is inserted. Or, the Blogger file that is published can be an include file itself.

The basic Blogger service is completely free. The only "payment" required is that you include a link back to Blogger.com to help spread the word. There is also a subscription version of Blogger, called Blogger Pro. It offers advanced functionality, and you can upgrade at any time.

Doing it for real

We went through the creation process for a blogger and it did indeed take only a few minutes to get to the message creation stage. At this point we did run into problems as, for some reason, Oregano 2 and the Blogger page did not seem to get on and we couldn't actually publish a page.

We are looking into this and hopefully the situation will be resolved soon.

Apart from creating your own blog (or blogs) you can become what might be called a blog-eur, someone who takes pleasure in reading about other people's private thoughts. (Mind you any one who wanted to keep their thoughts private would not be publishing them on the Web.)

If you do have your own blog why not contact us and let us know it's address. Blogs are for reading and we'll publish a list of them.

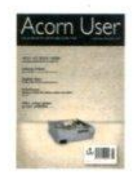
And hopefully by next issue we will have ironed out the problems between Oregano and Blogger and you'll be able to read our innermost Acorn User thoughts on the Web. Or maybe not.

Happy blogging!

Rob Donaldson
editor@acornuser.com



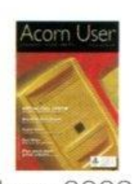
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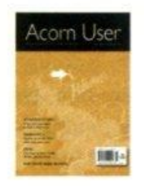
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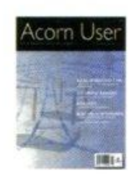
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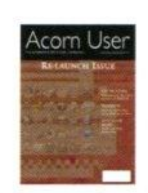
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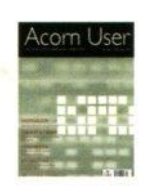
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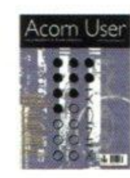
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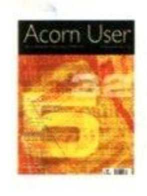
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More power to your data

DataPower2 uses a separate but closely linked application to draw graphs. A set of data can be directly extracted from *DataPower2* using a menu option. This opens a new window onto which the graph will be drawn. You have first to specify, via a drop-down menu, what is to be plotted and in what format.

The formats supported are pie charts, scatter diagrams, bar charts and line graphs. Each format has various options within it and all can be drawn as two or three dimensional form. There is also full control over font sizes, colours, title, and so on. Quite a comprehensive graphing facility although not as powerful as some stand-alone packages.

The graphs are not "active"; they do not reflect changes in the data in the database. Any changes made within the graph package itself, such as changing the title or colours, are not known about by *DataPower2* itself and so if the graph has to be redrawn with new data these changes are lost. Graphs may be saved in either Draw or Graph format. In the Graph format some, but unfortunately not all, of the changes made to the graphs are retained. The examples overleaf show some of the types of graph you can produce.

Scripts

DataPower2 includes a very power scripting language. Its syntax is similar to Basic but with a number of database specific facilities. Subroutines and functions are both supported.

A very simple example of a script, which is used in most databases, is one which switches between layouts when the user clicks on an element on the layout. The element may be any item but is usually a "button". The database designer has complete freedom to design the button's appearance. Having created the button the script is placed "behind" it.

The button is usually the standard RISC OS type of button; a "raised" area in grey with text or an image indicating what will happen when the button is clicked. You can see a typical layout with a set of buttons each of which will switch to a different layout when clicked.

The script "behind" each of these would be of the form:

```
On Clickleft Layout("LayoutName")
```

The first part "On ClickLeft" says "when the left mouse button is clicked over the button obey the instructions which follow". The rest of the line says "close the current layout and open the layout called LayoutName". Each button would, of course, have the "LayoutName" replaced by appropriate layout name.

The script language supports the use of variables which must be declared and their type specified before they can be used. There is a full set of control statements, if..then..else..endif, for..next. while..endwhile, repeat..until and try..except..endtry. This latter one enables the execution of statements which may fail without causing an error.

Scripts may call all the in-built functions which are listed above. In addition new functions and subroutines can be written; functions return a single value and subroutines do not return a value. Both functions and subroutine may have parameters. They can also be placed in a global area so that they can be accessed from anywhere within the database.

Many scripts will be written to manipulate the data in the database in some way. This requires the scripts to have access to this data. In some cases it is possible to refer directly to a database field by name when a query has already made it available. However, it is often necessary to extract the data entirely from within the script. As the only way to access database data is via a query, the scripting language includes a whole set of commands to do this. It is beyond the scope of this article to go into much detail but the following section of script should give you an indication of the power of this technique.

Script to access database data

Suppose we have a database which has a table with a field called MyField and a query called "MyQuery" which returns all the records from that table. To get the value of this field in the first record of the set returned by the MyQuery query we could use the following script section (note that everything on a line after two forward slashes is considered as a comment.

```
// All variables that we use must
be defined before they are used

// I like to define them all
together at the beginning of the
script

// Here we define a variables for
the database, the query definition,
the

//  set of records returned by the
query and a variable we shall use
to

//  determine whether or not an
action has succeeded

Dim DB as Database, QD as QueryDef,
RS as RecordSet, b as Boolean

// More variable declarations: one
of type field which will used to
point to the

//  required field and a text field
to hold the value in the field.
Note that

//  we have assumed the database
field is a text field; if it were a
real field

//  we would have to define a real
field to hold the returned value

Dim F as Field, T as Text

// The following line initialises
our database variable to point to
the current

//  database, i.e. the one in which
the script resides.

DB=CurrentDB

// Initialise our query definition
variable to point to the specific
query. Note

//  that we have to prefix the
command with DB as the query is
within the database

QD=DB.QueryDef("MyQuery")

// The next command runs the query
defined by QD and puts the
resulting record set
//  into the record set variable
```

RS. Note, again, the use of QD as a prefix

```
RS=QD.OpenRecordSet

// Set the variable F of type field
to point to the field whose name is
MyField

// within the records returned by
the query MyQuery. Note the prefix
of RS to

// specify which record set is to
be used

F=RS.Field("MyField")

// The data in a record set can
only be retrieved from a single
record at a time.

// The particular record in
question is pointed to by a special
internal pointer.

// When a record set is first
retrieved and put into a record set
variable this

// pointer is not set so the first
thing that has to be done is to
initialise

// this pointer. This is done by a
command such as the following one.
In this

// case the pointer is set to
point to the first record in the
set

b=RS.MoveFirst

// In principle the attempt to set
the pointer could fail, there might
be no

// records in the set, for
instance. The next line checks
whether or not the

// action was successful. If so
the required value is retrieved
from the database

// field and placed in the
variable T; if not an error message
is generated

if b then T=F.GetValue else
error("Could not find record")
endif
```

Despite the length of the sample script there are only eight actual lines of code; the rest is explanatory comment. Also the "long code" version of the commands have been used to make it a little easier to describe. With practice script writing becomes fairly easy.

This example script section assumes that a suitable query exists but scripts can be used to create new temporary or permanent queries. In fact scripts can be used to manipulate both the data and the structure of a database. At this point it would be useful to examine the language used to do this.

So far all the scripts have been assumed to be within the database. However, script files are also supported. These are files of type *DPscript* which contain *DataPower2* scripts which can be executed. They require specific commands to identify the relevant database but otherwise include standard script commands. These add a very powerful facility to *DataPower2*.

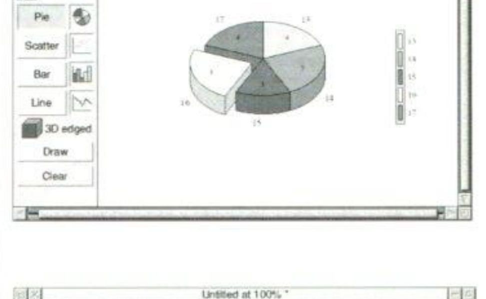
SQL

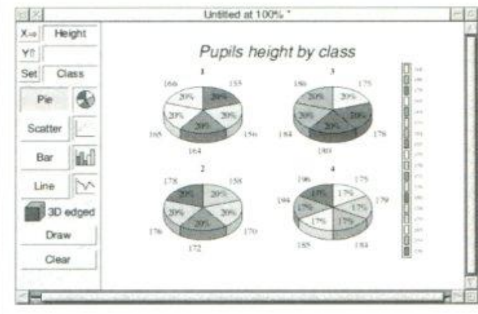
SQL (Structured Query Language) is a very specific language devised with the sole purpose of manipulating relational databases such as *DataPower2*. As with almost all implementations of SQL databases *DataPower2* does not stick precisely to ASCII SQL, nor does it implement the full set.

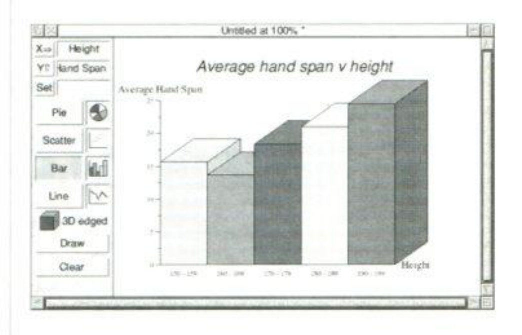
However, it does support a very usable subset. In fact, internally, all database functions are performed using SQL within *DataPower2* but it also provides an alternative user interface which enable almost all of the supported functions to be performed without any knowledge of SQL.

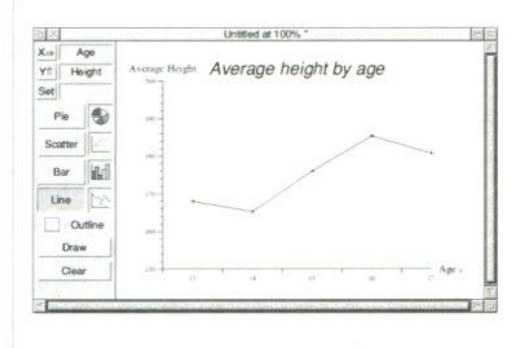
The combination of the internal use of SQL and an alternative graphical user interface enables *DataPower2* to be a powerful but easy to use database management system.

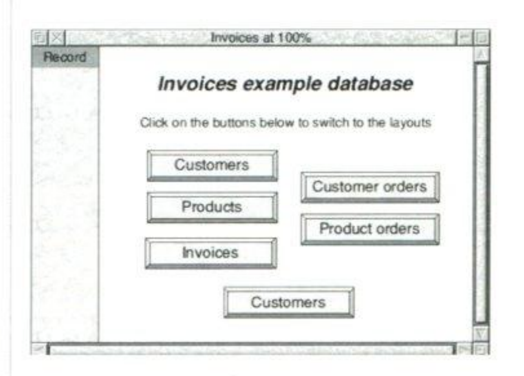
Julian Fry
julian.fry@acornuser.com











Product: DataPower2
Price: £125 single user (£350 ten users; £500 for 100 users)
Supplier: R-Comp, 22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS
Tel: (+44) 01925 755043
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E-mail: rcomp@rcomp.co.uk

Battery power

As part of the development process for the computer systems supporting the Virtual Call Centre (Acorn User, June 2003), I realised it would be worthwhile doing a couple of things to improve the basic hardware set-up. One was to make everything quieter (the systems live in my house), the other is to employ battery back-up so that systems could survive power failure, whether that be accidental or as a result of needing to move systems and turn power off for refits.

The Vcc system uses a Risc PC running its central control software, so this was naturally the place to start. And once the circuitry for that was understood, it could easily be adapted to support the hardware to run the individual access lines which are R7500-based. So this isn't a fully developed commercial design yet, but it is a fully tested and working prototype.

Power considerations

To design any power system you clearly need to know how much power you have to be able to deliver, and to decide how long you need to deliver it for. Most UPS (uninterruptable power supply) systems are designed for PCs and boast of being able to keep your system running for several minutes, just time for a clean shut down. But I'm after maybe two hours of operation from one small battery. Happily two things work in our favour here.

I'm not trying to provide power for many ancillaries or a monitor. And I'm working with ARM hardware. There's a big difference. PC power supplies are usually rated at 250Watts or more, even though Windoze PCs don't use this unless loaded with extras. But a low power mobile AMD is still rated at 35Watts! Thankfully ARM systems use very little power. But how much?

The Risc PC used a 103W psu, though early supplies were lower rated. But this has to be enough to power extra hardware, drives, CDs and so on. So I dismantled a Risc PC and had a look at the actual power usage. The main board with little extra connected (no podules) uses around 8 Watts and requires 5V and +/- 12V supplies, the 5V supply being the biggest drain at just over an amp. It may be of interest here to note that switching between ARM 710 and StrongARM made no clear difference, and the current drain was almost identical whether the machine was idling or processing. Both tests used 16MByte RAM and 2MByte VRAM, but as I wanted to keep this base spec, there was no point in checking lower spec variations. I suspect it would make no real difference anyway.

Of course we still have the drives to consider. A regular hard drive uses as much power again and is noisy (usually). It is impossible to be exact as they differ considerably, not just in power usage but also in the respective demands on the +5V and +12V supplies. CD ROM drives also use both power rails and also differ considerably.

For example:

Quantum Fireball 30G:

5V at 700mA 12V at 800mA

Philips CDRW

5V 1.6A 12V 400mA

As you can see this particular hard drive uses around 13 Watts, the CDRW uses almost as much. They each use notably more than the motherboard! So how to cut demand?

If we rely on network connections, we can dispense with floppy and CD, but we still need a hard drive. Fortunately there are two possible solutions to reduce power needs and extend battery life. If you really need a hard drive, a 2.5in drive, designed for laptops, is more frugal and supports powerdown mode. So when not running it uses next to no power, when running it uses as little as around a Watt, again the drives vary substantially. They also only use the 5V supply which may prove useful. Last but not least in my view, they are quieter, markedly so on average. (They are also slower, but on ADFS, you won't notice.)

The problem is that the connectors are different. However Maplin now do an adapter for this purpose (as do many others) which allow you to connect a 2.5in drive to a standard IDE port and power line designed for 3.5in drives.

There is another alternative: Compact Flash. (I understand other flash storage systems can also work but as I have no direct experience I will ignore them). Simtec's R7500 board (and I believe their IDE podule) are designed to support Compact Flash. In fact the standard ADFS will see, format and use Compact Flash as though it were a hard drive.

Compact Flash uses virtually no power. That may be a major benefit, but there are problems. First the size limit is currently I think 1Gb, though they are getting larger. Second, the cost is considerably higher per byte and you will also need to buy an adapter card. Third, there is a theoretical limit to how many read/write cycles Compact Flash will tolerate. This would rule the technology out for Windoze (except CE) which not only needs huge amounts of disc space it also writes constantly to disc: but it is not a problem for RISC OS.

!Scrap, however, can make frequent disc writes. So I modified *!Boot* to copy *!Scrap* to a RAM disc and then run it from there. I'm not certain this is truly necessary though. I talked to the specialists at Kingston who acknowledged the theoretical limits to Compact Flash but assured me that their tests suggest the technology is very robust in practice.

Whether Compact Flash will suit your needs depends upon your requirements. One such requirement is size. My almost unaltered RISC OS4 !Boot occupies less than 10MBytes. My old 3.7 !Boot uses over 100MBytes of disc space, though that is well loaded with extras and probably a fair deal of outdated rubbish, but is useful as a guide to what it might accumulate. (There's also an issue of disc size and LFAU which probably expands my 3.7 !Boot considerably.)

So my system, though it currently uses a 2.5in hard drive, will be adapted shortly to run a 512MByte Compact Flash. And ultimately the slave units will each be R7500 boards running 10Gb laptop drives as these must have decent amounts of hard drive storage for the audio files they will carry. My design should deliver sufficient power to run these, although it is unlikely anyone else will want this configuration.

However the extra power allowance will offer the option to include CDRW drives as well. You can also get half height CDRW drives which are intended for

laptop use and also have lower power demands. For regular drives, take care they don't use too much current especially from the +12V rail.

The circuit design

My first thought was to retain the power supply unit, and implement something like the standard UPS system. An off-the-shelf UPS is an external box which trickle charges a battery, then when needed it generates synthetic mains using the battery to supply power. To my mind that is a design based upon the idea that it is an aftermarket product.

An intrinsically better idea is to generate an intermediate DC voltage and use that to charge the battery, then to use either mains derived DC or battery power (when needed) to power a DC to DC converter. This is also more efficient and quieter. So the internal PSU went to the spares cupboard.

There are still choices to make: How do you convert mains to DC at low voltage? You could use a commercial power supply to do the job. That would be small, light, and about the same cost as the alternative, a transformer-based supply. But it is also less efficient. Now the argument here isn't about efficiency per se (the power wasted isn't much) but about heat and noise. Energy loss generates extra heat which has to be vented, and that might mean a fan which creates noise. I'd rather reduce both where possible. So I opted for a transformer. Sure it's heavy, but as we will be fitting a substantial battery anyway, who cares? This isn't a portable.

(A friend asked aren't switch mode supplies more efficient? In some circumstances, they are as transformer supplies often need power dumping of some sort to provide regulation. But as you will see, the use of a DC-DC switch mode converter later in the power chain obviates this problem.)

It turns out a Yuarta 7AHr 12V battery fits the power space of the Risc PC nicely (see picture). These batteries are sealed and designed for this sort of work so are ideal. I then trawled through the DC-DC power supply packages and found the FDC40-12T0512 which uses an input in the 9 to 18V range to generate 5V at 4A and +/-12V at up to 800mA, which is 40W in all, with an efficiency of typically 85%. Not bad, but not cheap at around £100.

I then obtained and tested a suitable transformer, a 80VA toroidal device from RS components rated at 12V output. Now in theory, this gives 12x1.414 V rectified output, just under 17V. That is inside the spec of the FDC40. But a word of warning: Off load it will give more, in fact this one produced almost exactly 18V. It's tight, but OK. However cheaper transformers may not be as well behaved, off load, bad designs have a tendency to float higher, delivering the rated voltage only on load. This design has to be able to survive both on and off load, so the transformer must not float too high.

Next we need a decent bridge rectifier and a capacitor: the function of the capacitor is to store charge from the peaks of the rectified waveform and keep the voltage up during the troughs, so it has to be big enough to do this. I used a 30000 microfarad capacitor and checking with the scope confirmed my rough calculations, it's more than enough.

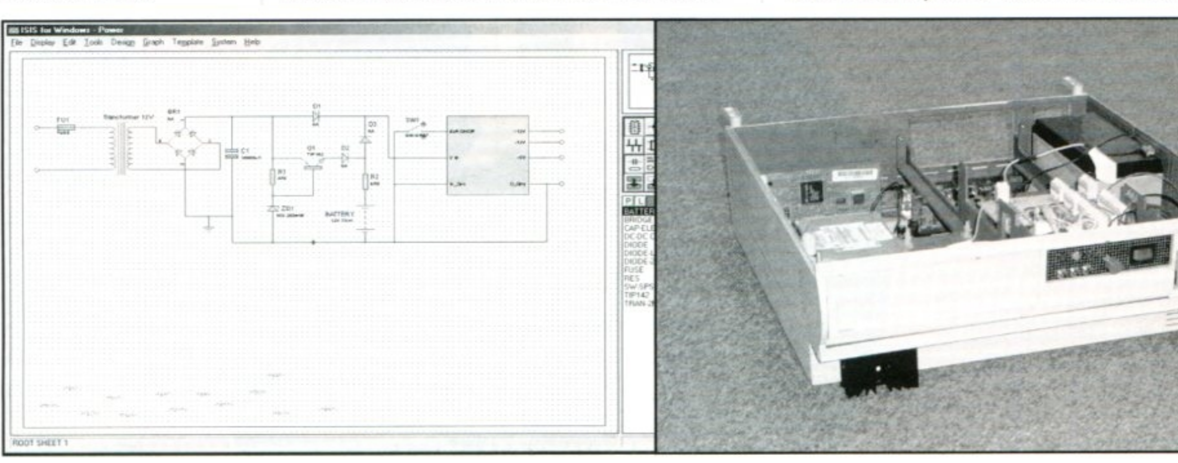
Now we need, minimally, two more things: a charger circuit and a way to switch between mains derived power and battery power. Take the latter first, and consider the block diagram of Figure I. You can see the mains input, switched and fused. Next the transformer, the bridge rectifier and the capacitor. From the rectified low voltage two feeds are taken, one goes via a diode to the DC-DC converter, the other, via another diode to the charge circuit. The battery is also connected to the DC-DC converter via a third diode.

This provides for a very simple and entirely seamless switch between mains derived power and battery power. The DC output from the transformer is around 17 Volts, while the battery is at no more than 13.6 volts. So with mains available, the power flow through D1 and D3 will be reverse biased. If the power fails, power will flow from the battery instead. The voltage delivered to the DC-DC converter changes, of course, but as it can handle anything from 9V to 18V that is not a problem.

Now for the charger circuit. Lead Acid cells can be charged at different rates according to need. For this application we don't need a rapid recharge, one assumes power failures will be rare and isolated. So a slow recharge rate will do fine. Maximum charge rate for the cell type I chose has to be no more than 20% of the AmpHr rating, so a 7AHr battery should not be subject to a charging current of more than 7x0.2=1.4Amps.

And the battery should be limited to no more than 13.8 Volts, any more would damage the cell. So the simplest circuit would be one that delivers 1.4 Amps when the battery is at its lowest, say 8 Volts, but which tops out at 13.8V or marginally less. The battery itself will limit the current flow. This sort of circuit is easy.

In Figure II, R1 and ZD1 generate a stable 15 Volts from the incoming 17V supply rail. That 15V is fed to the base of the Darlington transistor TR1, so its emitter voltage is around 15-1.2V or 13.8V. However at very low charge currents it will rise higher as the 0.6V per transistor junction rule of thumb breaks down. And there is a danger that current might flow the wrong way through TR1 when mains power fails and the collector



of TR1 is effectively grounded.

So the addition of D3 both reduces the output voltage slightly and avoids any possibility of discharge through the transistor. Finally R2 limits the current flowing through the battery to less than 1.4Amps when the battery voltage is around 8V. R2 has to be of sufficient power rating to dissipate the heat it generates (max approx 6Watts) and TR1 must be mounted on a heatsink, it must dissipate several watts too.

Of course you could get more sophisticated than this: using an op-amp perhaps with a current sense resistor to increase the charge rate and optimise battery charge, but in practice I didn't see the need. I have however added a couple of refinements.

The first is a simple battery condition monitor. My circuit uses three comparators to monitor battery level. The first switches an LED on if the voltage drops below about 10 Volts, which should indicate a shorted battery cell when the system is under charge. The second comes on if the voltage rises above 9 Volts and indicates the system is broadly OK, provided neither of the other LEDs is on. The last comes on if the Voltage exceeds the float charge levels of about 13.8 Volts, which will therefore indicate an open circuit caused either by a battery failure or a wiring fault.

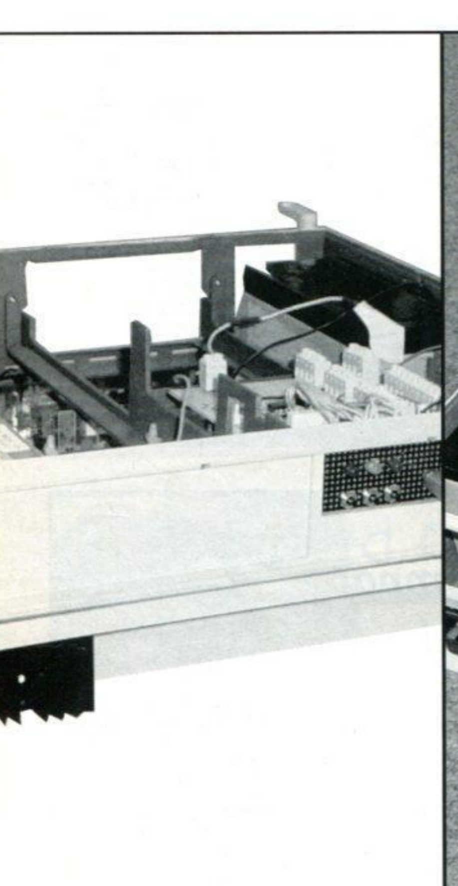
Finally I have provided a simple fan power control which works from a temperature sensor and uses the fourth comparator. When cool, the system delivers around 9 Volts to the fans (a triple fan unit which mounts in a 5in drive bay, sourced from Maplin) simply by slugging the power line with resistors. This ensures the fans are normally slowed down and very quiet. If the temperature sensor gets warm enough, the slug resistors are short-circuited by a transistor and full power is delivered to the fan unit. If you need circuit diagrams for these, e-mail me at the address provided.

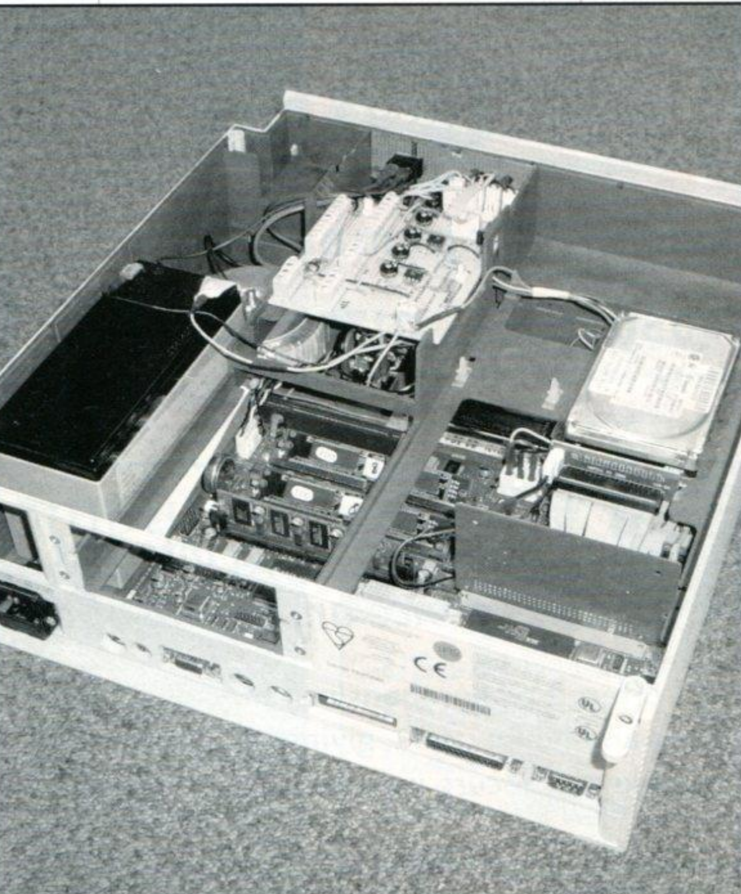
So far I have said little about the FDC40 DC-DC power unit. This is a commercially available switch mode supply delivering adequate 5V and 12V power rails for my use. If you want different power levels or, for example need higher current 12V rails and so on, you will have to search for a more suitable unit (or combination of units) for you. But in principle they are all very similar.

Several points are worth making though.

The first is that in common with many units, the FDC 40 has a remote on/off control pin. On the FDC40 this is simply grounded to earth to turn the unit off, so I fitted a push-push switch to provide a power on/off control. I also fitted three reset buttons to the front panel, one for the Risc PC, the other for the R7500 slaves. To add a front panel reset for a Risc PC board means soldering two wires to the underside of the main pcb, it's simple enough but only do this if you are confident you know what you are doing. You don't have to remove the existing reset switch as this shorts the pins when pushed in, so the front switch can be a push-to-make (not latching) simply connected in parallel.

Second, by removing the old PSU, the case is now no longer properly grounded. For safety you must earth your power circuit ground and the incoming mains ground to the case. One way to do this is to use either the old hard drive fixing screw stud or the old psu screw fixing stud as the ground point. You must also provide a mains fuse. I did this by fitting an IEC type mains chassis plug on the back which







has a fuseholder included. You should also provide a mains switch. As I couldn't see a way to use the old switch which is built into the old psu, I used a double pole illuminated rocker mounted on the panel fitted into the unused floppy drive bay. The advantage is I also get an obvious indication of mains power status.

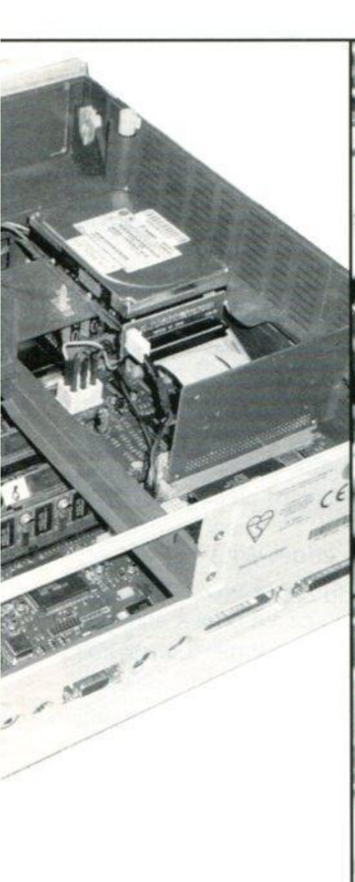
The circuit in use

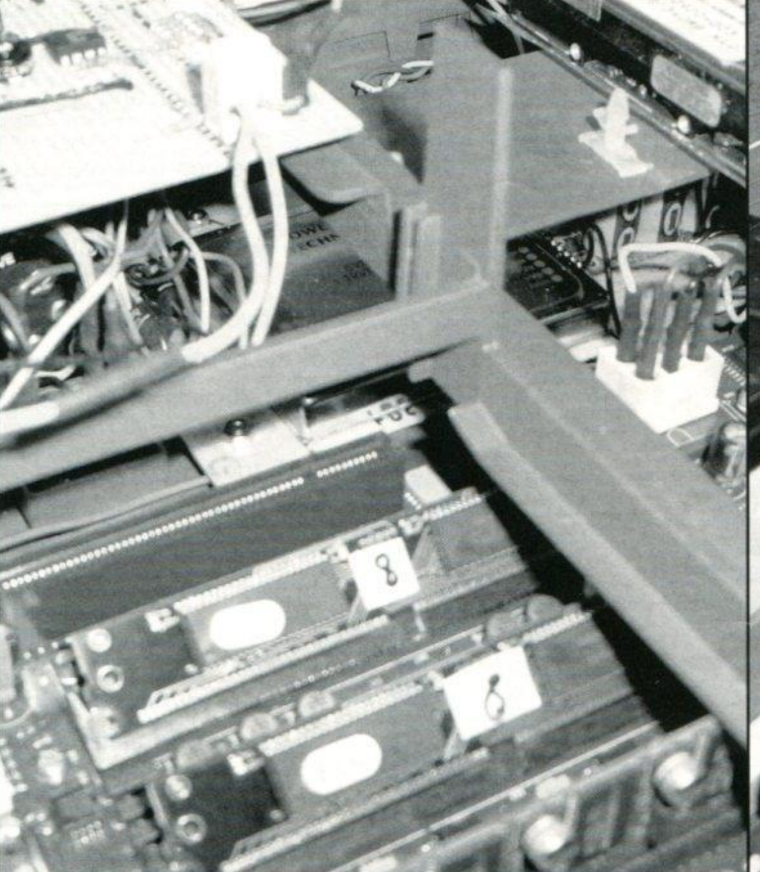
So how does it perform in practice? Well the first observation is that the change-over between mains and battery power is absolutely seamless. And the whole Risc PC, the 2.5in hard drive running permanently, keyboard and mouse, it provides almost seven hours backup. Without the hard drive, (power down is turned on with: SYS "ADFS_PowerControlin',1,4,1) the system lasts maybe 20% longer.

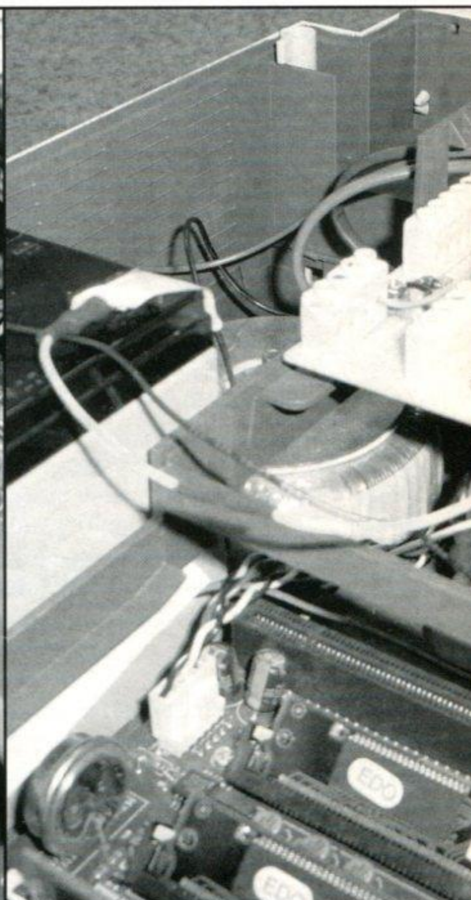
Not bad, seven hours is three times as long as the time the electricity suppliers regard as a maximum allowable power outage. Of course on rare occasions power may be out for longer. But if that is a serious consideration, there's no reason why the circuitry couldn't be adapted to draw power from a bigger panel.

Final thoughts

Only you know if you are competent to try this for yourself. Remember this requires reworking mains supplies and altering the systems that support your hardware. Getting it wrong could be serious, not just for your computer but for you too. Having said that, you can e-mail me with questions.







system is indeed very quiet, the hard drive is almost inaudible and with the Compact Flash instead the only sound would be from the cooling fans. I was surprised at how hot the DC-DC converter got, but some calculations suggested that this is normal as the rated power losses in the circuit would inevitably lead to the device heating up given that it has no heatsink. It's not actually dissipating much power, it is just ill-equipped to do it and stay cool. If it bothers you, stick on a heatsink.

Crucially, the question of how long the system remains working. With just the battery though naturally that would require beefing up the charger side. With capacities up to fifteen times my chosen battery readily available, it's neither too hard nor too expensive to provide battery backup for almost any likely eventuality.

Finally, by arranging the power supplies this way, the option of using DC power from other sources (a car power socket) becomes almost trivial, and given that LCD displays are usually powered by an external psu, it wouldn't be too hard to add circuits to support your particular

Julian Coleman has been working in the RISC OS market for many years and has developed many applications for RISC OS. His most recent creation is the Virtual Call Centre covered in the June issue of Acorn User.

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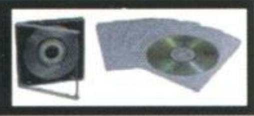
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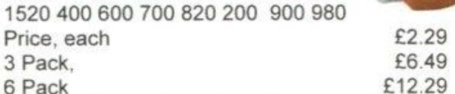


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Getting into Special Needs

The shrewdest teaching professionals have been wise to the value of a day out at Special Needs London for the past 30 years. But major changes have taken place and there are now more than twice as many reasons to visit this hugely popular event in 2003. Last year's Special Needs London was full to capacity but more exhibitors wanted to get on board and something had to change.

The result was a switch to the National Hall at Olympia where the extra space allows the launch of Education Show London alongside the well-established event. Sister show to its namesake held annually at Birmingham's NEC, it will operate under the same roof as Special Needs London from September 25 to 27. And Emap, working in partnership with the British Educational Suppliers Association and the Publishers Association, are confident this radical move will give teaching professionals a far more comprehensive service. Ruth Stuart-Moore of the Publishers Association explained further: "The two events will run side by side in 2003 because every teacher is now a teacher of Special Needs.

"Combining the events offers teachers the opportunity to share in a much greater amount of knowledge, experience and information. "This sharing takes place between all different types of school, teachers with all different levels of experience: from experienced SENCOs to less experienced mainstream teachers, and with our many exhibitors.

"By bringing the two shows under one roof, we are confident that all teaching professionals will benefit enormously from a visit to Olympia."

Education Show London targets all ages from early years and primary education through to sixth form, providing the perfect platform for education resource suppliers to meet buyers face to face.

The new concept has already won the backing from two of the biggest hitters in education in the capital, the Commissioner for London Schools, Professor Tim Brighouse and Stephen Twigg, Parliamentary Under Secretary with particular focus on raising teaching standards in London.

Mr Twigg, who will open the exhibition, said: "Education Show London brings with it an opportunity to celebrate the contribution teachers make to learning in the capital and to explore how we can attract the very best teachers here to help drive forward our radical reform. "Along with Special Needs London, this event brings together all those involved in education in the capital to improve what goes on in the classroom."

Professor Brighouse predicted the event becoming one that "nobody in the London education system wants to miss".

"In future years we hope to surround it with celebrations of the achievement of the young talent which is being unlocked by London's teachers," he added.

London Challenge has also backed the event by providing a fleet of buses to transport groups of visitors from all 33 boroughs free of charge. Once inside, visiting teaching professionals can wander the aisles in between attending any of more than 70 not-to-be-missed seminars on offer. Professor Brighouse will himself speak on many of the issues surrounding schools in the capital when he delivers one of the keynote addresses.

He is to be joined by other well-known names like Professor Gervase Phinn, who tackles putting Children at the Centre and Doug Brown of the DfES who will talk on Achieving With IT. More ICT issues will be tackled by Martin Ripley of QCA, who will speak about the Computer's Role in Pupil Assessment, while Philippa Lee from BECTA will talk on how ICT can help school leadership.

The new-look event will also see the launch of the first ever scheme designed specifically to celebrate the very best in SEN resources. The Teachers' Poll gives professionals the opportunity to vote for those products that help get the job done in the classroom day-in day-out. Votes can be cast at **www.specialneedslondon.com** and anyone who takes part is entered into a draw to win £1,000 worth of equipment for their school. The Poll will reward the best book, software and equipment currently in use for children with special needs as well as an all-time favourite classroom resource.

All this, plus the best in all manner of resources from computer software to furniture makes Special Needs London and Education Show London a must-see package for all teaching professionals.

You can register now for free entry at **www.specialneedslondon.com** or by calling the ticket hotline on 0870 429 4334.











Special Needs London

Pam Turnbull
Education@acornuser.com

More on the Driving Licence

Since we first mentioned the ECDL (European Computer Driving Licence) we have discussed it further with the British Computer Society and learned quite a few more interesting things.

It is very common in the RISC OS world to be quite dismissive of the ECDL, because it is based on Microsoft applications. Well, it turns out that, if you actually choose to look into the subject, you'll find that originally, yes it was. But as time has gone on and different versions of it have been released (we're now up to version 4) there has been less and less dependence on specific operating systems and applications.

In fact getting tested and having the various modules of the ECDL signed off takes place at approved testing centres, and there is a dedicated RISC OS one with an approved RISC OS version. Although the changes needed for this version are now less than they used to be.

ECDL is not a bad thing at all. A look at the syllabus demonstrates that it covers a very wide range of computer subject areas and getting an ECDL qualification requires a reasonable, but not daunting, amount of study and the tests are, well ... testing, but not vicious.

In fact the basic idea is a good one, a decent general understanding of computing let's you talk sensibly about the subject and let's you use them more effectively. It's the difference between being able to rigidly following a cooking recipe and being able to produce a passable result; and being a decent cook who knows how to substitute and change ingredients to produce a good result.

And perhaps the difference between a barely competent driver and a good one. There is also an advanced ECDL but we haven't looked at that yet.

The Rules

The European Computer Driving Licence (ECDL) is the European-wide qualification which enables people to demonstrate their competence in computer skills. It is designed specifically for those who want to gain a basic qualification in computing to help them with their current job, develop their IT skills and enhance their career prospects.

The ECDL syllabus is designed to cover the key concepts of computing, its practical applications and their use in the workplace and society in general. It is broken down into seven modules, each of which must be passed before the ECDL certificate is awarded.

Candidates obtain, usually from a test centre, a logbook listing all the modules. As they pass each module, the accredited testing body will sign the logbook. The modules may be taken in any order and over any period of time (up to three years, or even all at once) for maximum flexibility. When all the modules have been successfully completed, the logbook is exchanged for a certificate.

The seven modules that make up the ECDL are:

- Basic concepts of IT
- Using the computer and managing files
- Word processing
- Spreadsheets
- Database
- Presentation
- nformation and Communication

The qualification is designed to help people at work and at home. It will confirm to potential employers that the person has a professionally recognised, relevant and up-to-date qualification and it will assist in raising familiarity with the technology and its uses.

ECDL is fast becoming the most widely recognised qualification in the field of work-related computer use, because it is targeted at the full spectrum of the population, and because of the support and monitoring of the organisations behind it.

The British Computer Society (BCS) manages and promotes the ECDL in the UK on behalf of the ECDL Foundation. More information about the ECDL Foundation is available on the Web site at **www.ecdl.com** and more information about the British Computer Society is available at **www.bcs.org.uk**

As a candidate for the ECDL you obtain a Log Book before taking the first test, or you may be given one by the sponsoring organisation.

A Log Book is an official document which is used to record the accreditation for each test successfully completed. As you pass each test, the Log Book is updated. When all seven tests have been passed, the you (or the test centre) send the Log Book to the local ECDL office (BCS in UK) where it is exchanged for a European Computer Driving Licence.

The test can differ in form between countries, but they still have the same Syllabus and so show the same level of competence in computing.

Normally all tests are completed within three years of starting and may be taken at any accredited Centre in Europe and they don't have to be taken at the same Centre.

The tests may be based on software from any supplier. Some of the tests may have options depending on the facilities available at the Test Centre. Some of the modules may be taken together using integrated software where this is available.

The education and examination methods can differ between countries, but the people responsible appreciate the need for a valid and well-defined examination process. They are responsible to ensure that test centres reliably operate the process. The testing must be reliable and only those who prove to be skilled and with the right level of knowledge will pass the tests.

Conclusion

It is important not to be short-sighted. Since the ECDL can be applied to any appropriate software from any supplier, it must therefore not be limited to hardware either: Mac OS only runs on Macs.

What's important is that the student learns a good range of basics of computing. Acorn always used to be about education and there's no reason why it should stop now.

Rob Donaldson
editor@acornuser.com

I C computers

ICT GCSE (**www.ictgcse.org.co**) is run by Messrs Phillips, Motley and Kirkton who come from diverse backgrounds but the site does what it says on the tin. Phillips is responsible for the content and is an ICT and Business Studies teacher. The site is set out in sections aptly named: Project Guides, General Tips, Theory, Downloads and Exercises, Quiz, and finally Adam's Animations. So let's dive in ...

Project Guides

These are split into spreadsheets, word processing (although this is really desktop publishing), databases, web design and presentation. There are not a huge number of projects but good ones to start on if you are new to the subject or you want to set homework which children and parents can deal with at home. I'd actually argue that these are not really challenging and most Year 6 children could cope with these. However, if you have a child who lacks experience or confidence with ICT these make an excellent start.

So for spreadsheets you can experiment with fantasy league football, cinema or school play seating, or the most recent addition, a small business spreadsheet. Word processing provides a user guide to MS Paint for children, a school magazine and mail merge or how about a database for a dentist or football team? The Web design section provides information on how to create a Web page. While presentation is limited to making a PowerPoint presentation.

Each project is split into sections and this makes it a text heavy page to read, although you are encouraged to print this out and the text is explained by large images from screen shots, to flow charts and tables.

Taking the example of creating a magazine it is split into tabbed sections which identify, analyse, design, use/implement and evaluate the project.

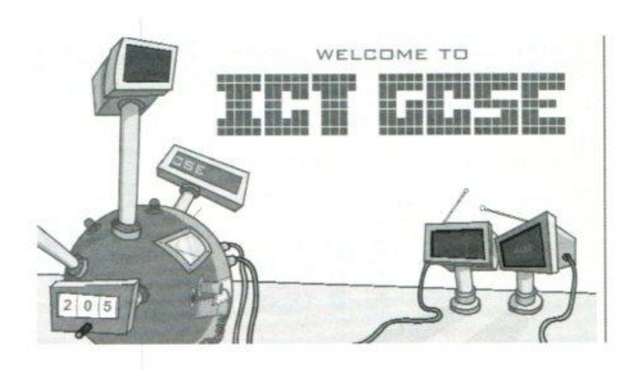
This is clearly written and as all the projects are presented in the same manner it imposes a good design regime on students starting by simply outlining the problem that needs solving, deciding why an electronic solution is the best one and so on before evaluating which type of application is the best to use and why.

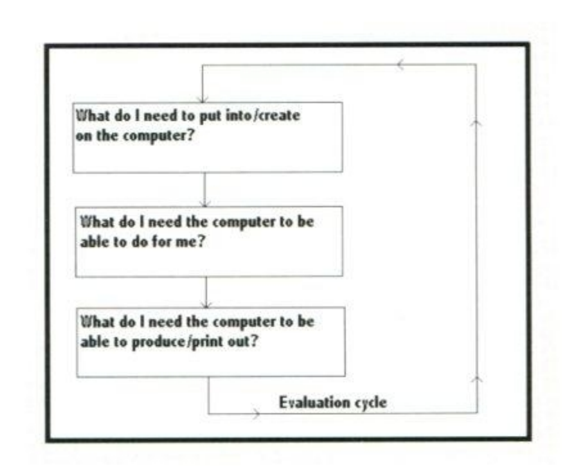
The elements here are not format or package specific and there are some good thought-provoking points in here despite the typos, spelling and punctuation errors! These are not immediate projects but long-term ones where research is expected and data collected so you can justify choices and decisions. In addition to the design, distribution is touched upon as is marketing. All elements which will lead to maximum marks.

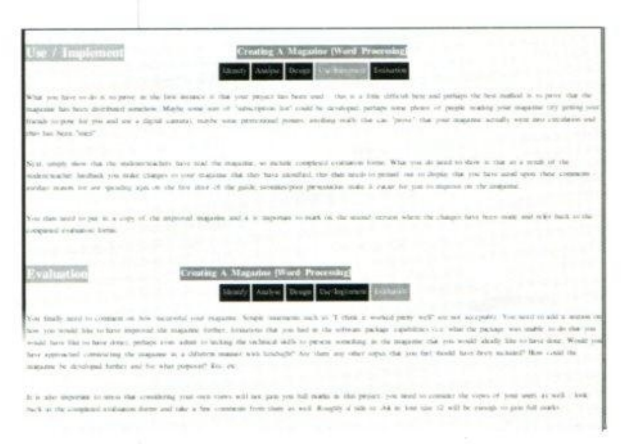
Or how about a database? You could try your hand at a simple flat file database before mail merging to a standard letter, in this instance where a few members of the local football team have fallen behind with their dues... Again the same design stages are gone through step by step but although you're given good advice, the work is certainly not done for you! You'll also find yourself referred to the General Tips and Theory sections which we'll cover later and is especially to those for whom 'field', 'validation' and 'forms' are a foreign language.

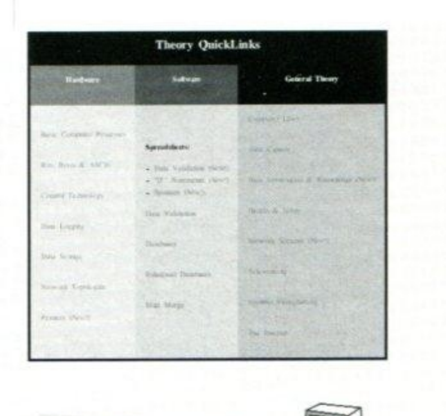
General tips

Useful for anyone using computers, they are designed for AS-Level and GCSE coursework students summarising the stages you must go through from outlining who the system is for and why you are doing it, to a list of quantitative and qualitative objectives and so on. Add to this what you need and where the data will come from and how as well as what do you need the computer to be able to do for you to provide the outputs that you require not forgetting to acknowledge the principle of feedback. Basically how you











need to write up your project and what it is vital to include.

Theory

Laid out simply as a series of Quicklinks split into three sections , hardware, software and general theory. This allows for quick access to Basic Computer processes, Bits Bytes and ASCII, Control technology, Datalogging, Data storing, Network topologies, printers, data validation, IF statements, spinners, databases (including relational databases), mail merging, computer laws, data capture, data information and knowledge, health and safety, network security, teleworking, systems flowcharting and the Internet.

In essence, this explains the basics and gives advice on how to use specific tools and features such as Excel's spinners. This is simply a couple of arrows that when you press them up and down, the number in a particular cell will change. Explained simply and illustrated by screenshots the approach works well explaining the benefits, such as with spinners whereby setting the spinner you can stop people from inputting data that can not be right, if we set it from £0 to £5 then people won't be able to type in £7 by mistake. Good clear tutorial instructions and screenshots allow you to follow along making the process as painless as possible.

Downloads and exercises

Still under development this is the place to come to see just how good your computer general knowledge is. Users are encouraged to add to this are of the site. The only criteria is that the exercises here must be different, challenging and written with students in mind not just a duplication of what is in textbooks.

I particularly liked the crosswords, cryptic, ordinary and a word processing crossword. Just click on the numbers to see the clues and type the answer in. Clicking the check button runs your answer through the computer which will delete any incorrect letters and give you a running percentage. You can download some PowerPoint demos and a file on Excel techniques. There are only two exercises up at present but the quality is good.

As well as a basic introduction to spreadsheets, there is a text and picture setting exercise. Here you are presented with all the text and graphics you need for a news item. It's up to you to change the sizes, fonts, layout and so on to make it stand out. When you think you're finished compare it to the finished thing. An excellent exercise, more like this please.

Quiz time

Never the same twice, you are presented with a random selection of ten questions from a present database of 182. A multiple choice quiz, some questions are easier than others. There is an immediate response when you've finished and you're told the right answer too! Do you know which of the following is a natural language? Machine code, BASIC, C or C+?

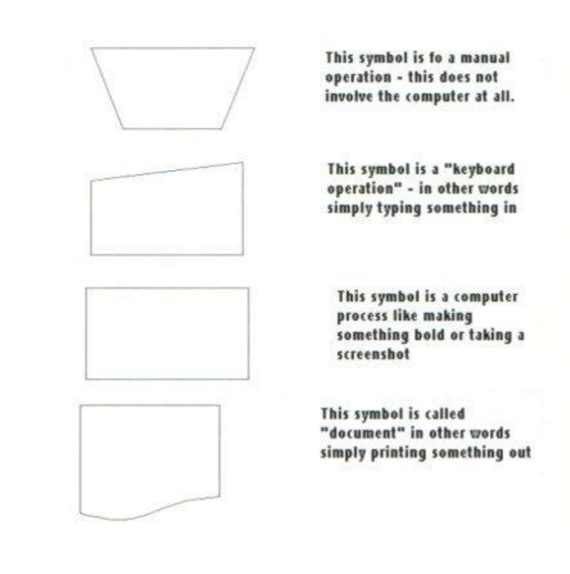
Animations

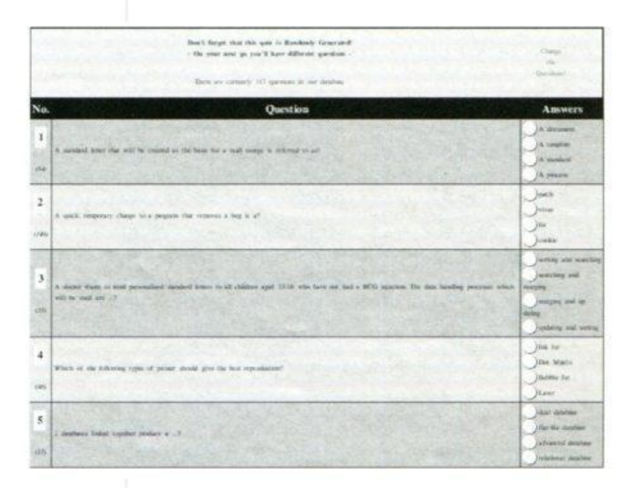
These Flash animations will definitely come in useful for the teacher, especially those with an interactive whiteboard. Explanatory animations could also be built into a presentation covering key areas of: datalogging, control technology, ring networks, star networks and how emails work.

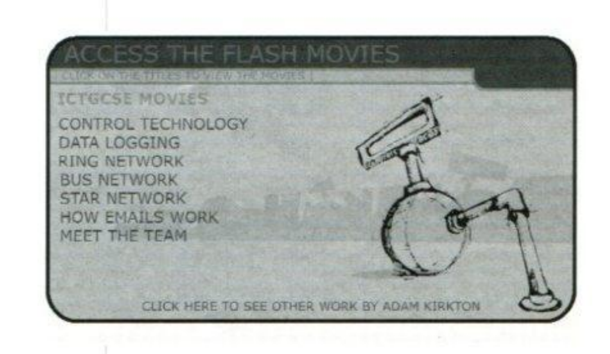
Bottom line?

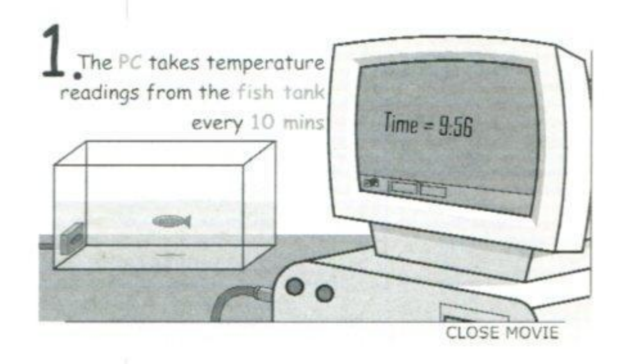
A very useful site for primary and secondary teachers, as well as GCSE students. There are some very good ideas and principles covered here and I hope it continues in the same vein.

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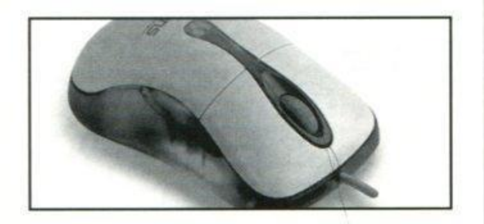
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Sens-E-tive mouse

A Mice are ten a penny, well not quite that cheap but they are definitely at the stage where you choose one according to style and interest rather than just utilitarian functionality.

The options on function have changed too, you can have any number of buttons located around the body while the body shell itself is shaped in various ergonomic ways. You can have optical, a very definite improvement on mice with balls no matter how heavy and macho they are.

And you can have cordless. But for cordless you also have to have a receiver and batteries and that's inconvenient. Have you ever had a mouse stop working in the middle of the night because the battery has run down? I have, it's annoying.



So this issue we are looking at a compromise, it is a USB optical mouse and it has a cord. The power for the optical bit comes from the USB itself so no batteries are required. (I will admit that I really do prefer a cordless mouse for the lack of drag but you pays your money and you takes your choice.)

Anyway we have the TekGia E-Sens Optical Mouse M5 obviously it has Windows and Mac on the label but it will also work with RISC OS using either the Simtec podule in any Risc PC, or on the Iyonix PC with its built-in USB. Both of these systems have standard mouse drivers and this is a standard USB mouse.

It has a snazzy orange look and it lights up with the optical drive light. As it is optical you don't really need a mouse mat but I have, in general, found it worth using one anyway, something with a nice distinct pattern, I prefer to have a surface I can clean easily.

The design is not as elegant as a Logitech mouse but they really are the Rolls-Royces of the mouse world. The TekGia mouse has the standard PC two buttons but it's a wheel mouse and the central wheel (though currently without function in the RISC OS world) is clickable and becomes the Menu button. This mouse does have two other buttons on the side which have no function.

The cable length is a generous 1.7m which I did appreciate, so many cables are just too short especially if you want to stick the computer under the desk. If you don't have USB there is a PS2 adapter as well although for some machines you'd have to buy a PS2 to RISC OS adapter as well. Easier to get a USB card methinks.

Product:	E-Sens Optical Mouse M5
Price:	£14.99 inc VAT (uk postage £2.50)
Supplier:	TekGia, The Triangle, Exchange Square, Manchester, M4 3TR
Tel:	08709 909 709
Fax:	08709 909 749
E-mail:	info@tekgia.com
Web:	www.tekgia.com

Camera recharge



As you may have spotted we still haven't been able to bring you our full series on Digital Video that we have been promising. This is unfortunately due to rather a lot of activity in the RISC OS market at this time.

Well this is a bit different. Semi-professional video is something that crops up from time to time, many extremely low budget films are made every year using professional crews. But keeping those cameras supplied with juice when you don't have the resources of Walden Media behind you, could be an issue.

If you are using any of the Sony V-Mount battery type, Hawk-Woods on V-Lok batteries; or using an adapter any NP1, Ni-Cad or Ni-Mh; Or an NP50/NP60 type Lithium battery. Then the Hawk-Woods VL-MR2 Multi-Resource Charger/PSU has been designed to provide that recharging capability.

And it's versatile: It will take anything from 90v to 240v AC mains input at between 50-60Hz. Or you can use it from a car lighter though I think you'll be needing a fairly chunky battery and some solid wiring but then you are carrying your filming equipment round in a Discovery, aren't you?

The instructions for the VL-MR2 are careful to warn you about potential risks running from a car lighter socket and you can get a special stabiliser to help.

Finally you can use the VL-MR2 to directly power your cameras using the appropriate leads, and it will chuck out an impressive 60 watts at 14 volts. You can also use it for lighting but the recommended limit for that is just 50 watts.

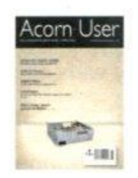
Recharging of battery packs can take anything from 1 to 4 hours from complete discharge depending on the battery 32W for the lowest power up to 120W for the big ones. Some batteries (Ni-Cad and Ni-Mh specifically) should be thoroughly discharged before re-charging. This is called revitalisation, the VL-MR2 will do that for you as well, safely, and then charge it up. This does add hugely to the time involved, a 50% discharged 32W Ni-Cad battery will take a good three hours to discharge.

All in all this is an excellent product and definitely worth it if you are using the right sort of batteries extensively.

Product:	VL-MR2 Multi Resource Charger/PSU
Price:	£POA
Supplier:	Hawk-Woods Ltd, United House, 32 Brinkley Road, Worcester Park, Surrey KT4 8JF
Tel:	+44 (0) 208 715 0999
Fax:	+44 (0) 208 330 5659
E-mail:	sales@hawkwoods.com
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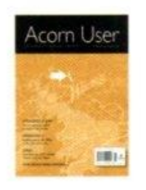
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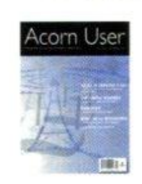
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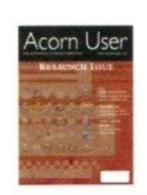
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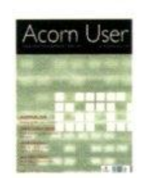
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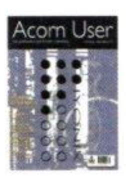
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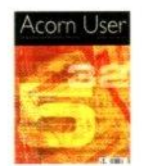
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